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ABSTRACT

Action research conducted by teams of university professors and middle school teachers investigated the relationship between teachers' developmental stages, collaborative research, and individual teacher change. Section 1 describes the study's purposes and objectives and the methods used in analyzing teachers' stages of development. An overview of the study is presented in section 2. Section 3 discusses developmental stage and life/age theories of adult development, organizational change, and school context and the value and method of collaborative action research. Section 4 describes characteristics of the participating teachers, the study methodology, and the two middle school sites; school contexts; and the history of school change. Section 5 describes the research topics undertaken by the two research teams. Section 6 presents findings of one team's research process and group process. Findings on the organizational and school context, as they related to the work of the collaborative research teams, are presented in section 7. Section 8 includes teachers' developmental test scores and their perceptions regarding issues in the collaborative action research process. The final section summarizes conclusions from the findings and considers implications for collaborative action research and staff development. The appendices contain: (1) a review of the literature on collaborative action research; (2) descriptions of research instrumentation; (3) discussions on action research and group process analysis and a case study of one research team; (4) reports from two research teams taking part in the study; and (5) descriptive summary reports on the teachers, researchers, and institutional settings involved in the study. (JD)

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A Two Year Study of Teachers' Stages of Development in Relation to Collaborative Action Research in Schools

FINAL REPORT

September, 1983

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1.0 INTRODUCTION

This report provides a description and summary of a two year project (1981-1983) funded by the National Institute of Education (NIE) to carry out collaborative action research in New Hampshire and Michigan. In this project, teachers from two junior high/middle schools and researchers from the University of New Hampshire and Oakland University met regularly in two action research teams to identify and study a research problem in their schools.

The development of this study has been unique in that a study of how teachers' stages of development (ego, moral, and conceptual) affected change in schools was carried out simultaneously and in conjunction with the teachers' design and study of a research question focusing on change in their own school settings. Although previous studies have effectively utilized collaborative action research in which both teachers and university researchers join in defining research questions and conducting research. this study incorporated many aspects that expanded the experience to make fuller use of both teacher and university involvement. The following planning and design features illustrate the differences from past studies:

- Recursion Process. Recursion was a major research process. This flexible approach involved redefining research questions and analyzing data and research problems taking into consideration developing themes and new directions during the life of the process.
- Participant Documentation. Participant observation was used to document team meetings. This documentation provided the basis for analysis of the collaborative team process and individual teacher differences.
- Investigator Involvement. Principal investigators were team members and served as the researchers on the team. This provided a unique perspective on the collaborative research process. It also created the fishbowl effect of a project within a project. To our knowledge this is the first time that this has been done in a study of this nature.
- Teachers' Perceptions. Teachers' voices became an integral part of the project. Teachers' perceptions as illustrated in logs, interviews, and team meeting documentation have been included in final reports.

- **School Context.** Each project was carried out within a specific junior high/middle school context. Each team consisted of teachers from one school and focused on a school-based problem.

- **Developmental Stages.** Adult development concepts were applied to the analysis of teacher experiences as members of collaborative research teams.

1.1 Purposes and Objectives of the Study

No one is called on to be more flexible in facing the demands of changing times than the teacher. Yet seldom have studies included teachers in the process of developing research questions or in voicing perceptions of research. Even more infrequently are teachers included in researching change in their own school settings where authority and peer pressures are at their most intense. This study was designed and implemented to address these conditions.

The overall purpose of this study has been to investigate relationships between developmental stages of teachers, collaborative action research in schools, and individual teacher change.

The three general research questions on which the study was based each led to a series of further themes to be investigated as the two-year study progressed.

The first question asked: "To what extent do teachers' stages of development (ego, moral, conceptual) influence and affect the process and outcome of a collaborative action research project?" Issues of importance were: 1) the collaborative research group organization and process, 2) authority of the university researcher and 3) goals and outcomes of the project.

The second question asked: "How do the contextual variables of the school affect individual teacher perceptions of and participation in a collaborative research project?" Issues of importance were: 1) teachers' receptivity to new ideas; 2) prevailing patterns that created possibilities or set limits in a collaborative research project, 3) the teacher's perception of the principal and the teacher's attitude toward power, decision making and change.

A third question asked: "How does collaborative action research affect teacher/school development?" To what extent does collaborative action research provide support and challenge for teacher/school development?" Issues which emerged in relation to this purpose were: 1) the importance of the principal's relation to the collaborative research team in effecting school change, 2) the teachers' changing perceptions of themselves as researchers, 3) the teachers' research skill development, and 4) the teachers' unique perspectives, abilities, and roles on the team.

This study did not intend to prove a particular set of hypotheses but rather to generate hypotheses and ideas based on teachers' perceptions, experiences, and deliberate study of the issues they chose to investigate. The project was designed to demonstrate that classroom teachers can function as practical researchers focusing on the real problems of the classroom and school.

1.2 Scope and Limitations

The scope of this study is necessarily limited by the number of participants and schools selected in order for investigators to develop the fullest characterizations of teachers involved. Two schools were selected, a junior high in New Hampshire and a middle school in Michigan. A team of five teachers was selected from each school to participate as research teams. The inclusion of more sites and/or more teachers in the project may have increased data collection capabilities and thus broadened the base of study. This increase, however, would not have made it possible for the university professors to be working team members, a key element in meeting the project's objectives.

After the first year of the project, one member of the New Hampshire team left the school to assume a new position (principal) and one member of the Michigan team left to devote full attention to her classroom. These two members were not replaced on the teams by agreement of team members because it was felt that the introduction of new personalities would disrupt the flow of the groups' action research and trust among team members that had developed during the first year. The departure of two team members after the first year, the change of one teacher from the junior high to the senior high, and the promotion of two members to part-time staff developers (one of whom went to a new middle school) illustrate the rapid-changing atmosphere of the school setting.

Developmental scoring is based on assigning scores to a person's verbal responses to predesigned interview questions based in hypothetical dilemmas. The scores that result are called the competency or capacity score. The current study, however, used the collaborative research teams' meetings, transcripts and reflective interviews as the naturalistic real-life context in which to investigate personal understanding and functioning. There is difficulty in scoring transcripts of collaborative research team meetings for social and interpersonal understanding in that analysis of the data might underestimate the individual's capacity.

Real-life content, as in a collaborative research team meeting, can be ongoing or remembered, stressful, or nonstressful, about oneself or others, general, impersonal, spontaneous or deliberately introduced. Data collected in this way are much less predictable than the hypothetical predesigned dilemma.

The naturalistic context of a collaborative research team (as opposed to a reflective interview only) can vary in numbers, sex, role, status, age of people present, quality of relationships between members, as well as situational variables such as expectations, pressures, and privacy. The manner of interaction may also vary according to the degree of spontaneity versus self-consciousness, reflectiveness, or deliberateness which a person responds with. For instance, a collaborative research team meeting can be focused at one point on a general question of how people are supposed to act and then in the next moment be a highly charged atmosphere where personal issues are at stake which for one person may be not important but for another person may be crucial and highly troublesome.

Whereas a reflective interview alone may probe to get the highest capability response, relevance can be gained through this method of interaction. Social reasoning performance becomes a focus of analysis and the important relation between social thought and social action can be investigated.

Difficulties in scoring interpersonal understanding in a naturalistic context (Jaquette, 1980, p. 230) can be applied to the collaborative research team: a) the need to be familiar with the collaborative research team in order to understand the group culture and certain idiosyncratic expressions, b) the decision of how much group discussion represented how many (interpersonal) issues, c) the decision of which issue a teacher response was to be assigned to, and d) the identification of the interpersonal stage.

In order to balance the questions of reliability and validity of scoring, this study has followed a suggestion by Selman (1980, p. 293). The problem in natural interaction conditions is how to ascertain whether a person's statement represents what it seems to. Many expressions observed in natural discussions do not necessarily represent low level understanding even if they appear to do so. Certain responses or ideas appear to be evidence for a person's minimal developmental social-reasoning level in interpersonal understanding and problem-solving: the person can think at least at that level. Other verbal responses seem to indicate a typical style of operating regardless of the person's minimum or maximum level of conceptual understanding.

If probed, an individual's response could indicate the highest level the person is capable of and thus be called the "competency" or "capability" level.

In the reflective interviews of collaborative research team members, responses were assigned to issues under investigation by virtue of the question probed. In the team meeting transcripts, however, few such questions existed. Thus, deciding which issue was represented was less straightforward and was often determined: 1) by the person's response rather than the questions posed by other members, 2) from the general context of discussion, or 3) from scoring criteria to see the issue which best fit the stage characteristics of the response.

As James Rest points out (in McNergney & Carrier, Eds., 1981, p. 145), "One class of activities that has not often been examined as an index of real life behaviors is that of verbal behaviors - that is, verbal opinions, arguments, or judgments expressed about social and moral issues in everyday life." McNergney and Carrier state that his argument is that the expression of a social judgment is a potentially powerful mobilizing force, which may have a strong impact on the shape and occurrence of external events. Rest says, "The ramification of publicly stated judgments are undoubtedly heightened when they are expressed by authority figures or role models - both of which may often describe classroom teachers." Collaborative action research can be an appropriate setting to investigate real-life verbal behaviors.

Two key aspects of the role of the investigator on the team differentiate this study from previous collaborative action research projects. First, the investigator was a university professor rather than someone from the school or school district with research skills. Another person (i.e., district personnel with research skills) assuming the researcher role may be perceived differently from the university professor filling such a role. When discussing teacher's attitudes toward the researcher, this study refers to the university professor as researcher (when in the role of team member). The reason this role is analyzed is because of the important university-school liaison that collaborative action research can develop.

Second, the university researcher was also the principal investigator for the NIE project. The role of the principal investigator as university researcher and active group member on the team has unique benefits. One obvious advantage is the principal investigator's greater flexibility in organizing problem solving sessions. Strengths in this study are the following. In an exploratory study such as this, the need to be familiar with the collaborative research team was necessary to understand the group culture and idiosyncratic expressions of its members. Objectivity was maintained by a participant-observer who documented team meetings. The investigator was able to devote the time and energy necessary to being a full team member. Collaborative action research is a way of defining new relationships between university professors and teacher practitioners - the excitement and potential of the team to meet real needs for all the members encouraged the commitment of time and energy. Teachers themselves described the value of working with a university affiliated researcher.

There is an occasional contradiction between the meta research role (observer) and the facilitative role (intervener for the sake of an anxious person or a disorganized group). Although beyond the scope of the current analysis, a comparison of the two teams in terms of each university professor's approach to the team and research process leads to many more questions of developmental matching and developmental growth.

1.3 Structure of the Report

Because this study is unique in its approach, with emphasis placed on teacher responses and remarks, a significant portion of the main body of the following report is devoted to building profiles of the teachers participating in the two collaborative action research teams. The report is structured so that the reader progressing from section to section can construct a portrait of each teacher and understand the way in which the teacher interacts in a group process in the school setting. It is, after all, the teacher's concerns and problems and the way in which the teacher's developmental stage affects change and perceptions of roles that is the central theme of the study.

As a result, full details of the elements of the report are not described as they traditionally are in the standard report format. For ease of reading and to assist the reader in focusing attention on the purposes and objectives of the report, only brief overviews of the theoretical approach and background (Sec. 3.0) and the research methodology (Sec. 4.0) are given in the main body of the report. The reader should turn to the appendices (Appendix A and B) for a more complete understanding of research methodology and reviews of the literature that provide a foundation and framework for the study. Beginning with the next section of the report (Sec. 2.0. Overview) will assist the reader in grasping the main points and themes of the study.

In one sense, this report describes studies within a study. The research process undertaken by the collaborative action research teams in the New Hampshire and Michigan schools is discussed in Sec. 5.0, and the reader should keep in mind that this process co-exists and interacts with the overall research carried out by the university investigators. The fact that the principal investigators participated in the teacher teams as working members (i.e., researchers) rather than in the stricter structure of staff development illustrates how the two processes affected each other. The teams' reports are found in Appendix D.

There are three sections in the report discussing the findings of the study. These focus on the three contexts under study through the life of the project. Although each of the three contexts could be viewed as standing alone and independently of the others, there is a significant interaction and relationship between the three contexts that should be seen as developing simultaneously to understand the teachers' roles and perceptions.

Section 6.0 discusses the findings regarding the collaborative/group process and Sec. 7.0 describes the findings of the school context. These two contexts set the stage for the primary findings of the individual context found in Sec. 8.0, which make up the bulk of the report. Whereas full reports of Secs. 6.0 and 7.0 are found in the appendices (Appendix C and E), it was felt that a more complete description of the individual context in the main body of the report would give the reader a clearer profile of the teachers involved. There is a flow intentionally maintained in their responses and remarks that allow the teachers to speak for themselves.

2.0 OVERVIEW

The primary purpose of this study has been to investigate the relationship between developmental stages of teachers, collaborative action research in schools, and individual teacher change.

Sec. 1.0 has described the purposes and objectives of the study, noting the design features which make this study different from recent collaborative research studies. It points out that while it is difficult to score personal understanding and functioning in a naturalistic context, this method of analysis provides valuable insight into the relations between teachers' stage of development, the real life content of the collaborative action research team, and the context of the school. Sec. 1.0 also points out that the researchers on these teams were university professors who were also the principal investigators of the project.

Sec. 3.0 presents the three theoretical frameworks which guided this study. It includes a discussion of developmental stage and life/age theories of adult development, organizational change and school context, and the value and method of collaborative action research. Extended reviews of these frameworks can be found in Appendix A and Appendix E.

Sec. 4.0 describes the teachers selected for the project in terms of their cognitive-developmental stage, academic and personal background, professional background and present teaching position, and career and age-related phase of adult development. It summarizes the methodology used in this study and includes a description of research instruments used to record and monitor the process of action research at each site.

Sec. 4.0 also describes the two school sites, school contexts, and history of school change. Of importance is Sec. 4.4, which explains how results from an in-depth analysis of the New Hampshire research team served as the basis for presentation of the findings in this report.

Sec. 5.0 of the report describes the research topics undertaken by the two collaborative research teams. It points out the problems the teachers in these two junior high/middle schools identified under the umbrella of "scheduling." Although both teams found that questions revolving around scheduling decisions affected all dimensions of their schools, the two teams chose to focus on different aspects for their research. The final reports of the two teams' action research appear in full in Appendix D. Sec. 5.0 includes a summary of the research skills acquired by teachers as a result of their experiences on the collaborative action research team and a list of dissemination activities carried out by the two teams over the two-year project.

Sec. 6.0 presents the findings of the New Hampshire team's research process and group process. The findings suggest that the group process and research project come together to create a unique group experience. Each of the patterns in the group process is integrally related to the research process. Direction and demands of the research influenced the ways in which the group members interacted, and the group's work on interpersonal issues affect the research project and process. Each of the five phases the team experienced is characterized by interpersonal (group-related) and task (research-oriented) issues.

Individual roles taken on by team members were not static; they changed over the two years of the project, reflecting shifting research demands and patterns of group interaction as well as teachers' changing perceptions of themselves as researchers. Appendix C includes a detailed chronology and analysis of the team's research process and group process including patterns of support and pairing, conflict and decision making, and researcher role.

The reader who delves into Appendix C to read the in-depth description of one team's collaborative action research process will arrive at Sec. 8.0 with a background in the content, chronology, conflicts, and individual's participation which will provide a context for the findings related to developmental stages of teachers presented in Sec. 8.0.

Sec. 7.0 presents the findings on the organizational and school context as it relates to the workings of the collaborative action research teams. The concept of the collaborative research team as a temporary system within the more permanent system of the school merits attention.

Sec 8.0 begins with a presentation of the developmental test scores of teachers and includes an additional assessment of Interpersonal stage. The teachers' perception regarding five issues in the collaborative action research process and within one school context are then presented to illustrate qualitative differences between developmental stages and the impact on the research topic, group process, and individual change. The five issues are: 1) attitudes toward change, 2) group organization and process, 3) group leadership and the university researcher, 4) principal of the school in relation to the project, and 5) goals and outcomes of the project.

Sec. 9.0 summarizes the conclusions from the findings and points to implications for collaborative action research and staff development.

3.1 Cognitive-Developmental Stage and Life Age/Cycle Theories of Adult Development: The Context and Content for Individual Change

Large numbers of psychologists have recently begun to draw upon developmental perspectives to aid in their study of personality. Various developmental theories describing predictable sequences of growth, adaptation, transformation, and change in humans have been employed to this end. While much of the work in this area has focused on the role of such developmental processes in personality development among children, more attention has recently been paid to such processes in adulthood.

Research suggests that there is wide variation in developmental levels among adults. Adulthood appears to be a time in which such processes as the reworking of identity and the differentiation and hierarchical integration of personality and thought have an influential role to play. Theories of adult development describe adults as capable of movement toward greater maturity, with this movement taking place in a predictable and orderly fashion analogous to the biological/maturational processes of development we observe in childhood.

Unique to adult development is the fact that biological/maturational events play little or no role. Adult development is paced by cultural and societal expectations as well as by personal values and aspirations. Two broad perspectives can be identified on the issue of what prompts developmental growth in adulthood. Life age/cycle theorists focus on predictable life events as pacers for development. Such tasks as establishing and maintaining social and interpersonal roles as well as dealing with essential intrapsychic tasks provide the impetus for change, and sometimes growth, in adults. Cognitive developmental stage theorists, on the other hand, focus on particular cognitive perspectives distinctive to different stages of development. The events that may prompt development will vary according to the perspective a person currently holds.

Life age/cycle theorists describe transitions and adaptations to life events; cognitive developmental stage theorists (hereafter referred to as "stage" theorists) describe transformations in adults' ways of constructing experiences. Life age/cycle theorists consider maturity to consist of successful adaptation to societal expectations; stage theorists, instead, describe a growth process of maturity in one's perspectives. For example, stage theorists say:

> Maturity may be seen as a developmental process of movement through the adult years toward meaning perspectives that are progres-

> sively more inclusive, discriminating and more integrative of experience. In ascending this gradient toward fuller maturity, we move, if we can, toward perspectives that are more universal, and better able to deal with abstract relationships, that more clearly identify psycho-cultural assumptions shaping our actions and causing our needs, that provide criteria for more principled value judgments, enhance our sense of agency or control and give us a clearer meaning and sense of direction in our lives. (Mezirow, 1978)

The life age/cycle theories (Levinson, Sheehy, Gould, Havighurst, Erikson, Neugarten) were used to investigate teachers' reasons for participating on the action research team. Appendix A, Report VIII, entitled *Review of the Literature: Teachers Life/Age Cycles and Stages of Cognitive Development*, includes a critical review of life age and life cycle theory. Appendix E, Report VII describes the *Life Age/Cycle Characteristics of Teachers* participating in the project.

Rather than focusing on the tasks each individual faces in the course of his/her lifetime, stage theorists focus on underlying patterns of thought which, they claim, play a central role in determining the individual's approach to the world. Stage theorists posit more global, holistic determinants of experience than those highlighted by life age/cycle theorists.

Stage theorists, such as Piaget, Kohlberg, Loevinger, and Hunt, maintain that human development, personality, and character are the result of orderly changes in underlying cognitive and emotional structures. These theorists focus on cognitive rather than interpersonal and emotional structures. Development involves progression through an invariant sequence of hierarchically organized stages. Each new stage incorporates and transforms the structures of the previous stages and paves the way for the next stage. Each stage provides a qualitatively different frame of reference through which one interprets and acts upon the world. The sequence of development progresses from simpler to more complex and differentiated modes of thought and functioning. The higher stages of development are said to represent more adequate modes of functioning in the sense that they include adopting multiple points of view, more empathic role taking, and more adequate problem solving.

Underlying these theories, therefore, is the assumption that development is a process of growth into maturity. Several of these theorists deny that implicit value systems underlie their ordering of stages. Loevinger asserts that higher functioning in terms of her system is not equivalent to good adjustment or positive mental health (Loevinger, 1976). Nevertheless, the temptation to associate "higher" and "better" in the systems appears to be hard to resist. This developmental sequence is regarded as a determinant of behavior on a par with such determinants as heredity and situational and environmental factors (Loevinger, 1976).

Cognitive/developmental theorists provide several different frameworks for observing how individuals organize their worlds: Piaget focuses on cognitive processes or thought patterns (1960, 1972), Kohlberg on moral reasoning processes (1969, 1976), Loevinger on ego maturity processes (1966, 1970a, 1970b, 1976), Hunt on conceptual processes (1966, 1975) and Selman on interpersonal perspective-taking (1980). Each of these frameworks is discussed separately in the sections that follow. See Appendix A, Report VIII, *Review of the Literature: Teachers Life/Age Cycles and Stages of Cognitive Development* for further discussion and critical analysis of the most current research related to these developmental frameworks.

Overview of Developmental Stage Theory

The developmental stage theorists provide one distinct framework in personality research. An overview of each is presented in this section. The stages of development of various stage theorists are listed in Table 1, which shows the correspondence of the ego, moral, and conceptual development stages.

Moral Development

Kohlberg's (1973) theory of moral judgment identifies three levels and six stages of moral growth representing qualitatively different systems of thinking that people actually employ in dealing with moral dilemma questions. Stages of moral development adhere to the characteristics of stage models listed in Table 1. The pre-conventional level has two stages, stage 1 being the punishment-obedience orientation and stage 2 having an instrumental hedonism and concrete reciprocity orientation. The conventional level consists of stage 3 with an orientation to interpersonal relations of mutuality; and stage 4 is oriented to the maintenance of social order. fixed rules and authority. The post-conventional level consists of stage 5 with a social contract orientation and utilitarian lawmaking perspective and stage 6 being the universal ethical principal orientation (Kohlberg, 1973).

Ego Development

In her theory of ego development, Loevinger (1976), has conceptualized seven sequential. invariantly ordered, hierarchical stages with three transitional stages. Each stage is more complex than the last and none can be skipped in the course of development. Different individuals, however, may

Stages of Development

Cognitive Development Piaget	Moral Development Kohlberg	Ego Development Loevinger	Conceptual Development Harvey, Hunt and Schroder
Sensori-Motor	Pre-Conventional		Unilateral Dependence
Preoperational (Intuitive)	Stage 0 - Egocentric	Presocial/Symbiotic	
Concrete Operations I Categorical Classification	Stage 1 - Punishment - obedience orientation	Impulsive	
Concrete Operations II Reversible concrete thought	Stage 2 - Instrumental egoism and exchange	Self Protective	Negative Independence
Formal Operation I Relations involving the inverse of the reciprocal	Conventional Stage 3 - Good boy approval-oriented	Conformist	Mutual Dependence
Formal Operations II Relations involving triads	Stage 4 - Authority rule, and social-order-oriented	Self aware transition	
Formal Operations III Construction of all possible relations	Post-Conventional Stage 5a - Social contract, utilitarian legalistic orientation	Conscientious	Interdependence
Systematic isolation of variables	Stage 5b - Higher law and conscience orientation		
Deductive hypotheses testing	Stage 6 - Moral principle orientation	Individualistic transition Autonomous Integrated	

Source: Chickering, Kohlberg, Bja

stabilize at certain stages and consequently not develop beyond these stages. The ego stages in this model are titled: I-1, Symbiotic stage; I-2, Impulsive stage; I-Delta, Self-Protective; I-3, Conformist stage; I-3/4, Self-Aware Transition; I-4, Conscientious stage; I-4/5, Individualist Transition; I-5, Autonomous stage; and I-6, Integrated stage.

According to the theorists, the Impulsive and Self-Protective ego stage correspond to the pre-conventional moral judgment stage. The Conformist, Self-Aware and Conscientious ego stages correspond to the conventional moral judgment stage and are suggested to be predominant adult ego and moral stages (Hauser, 1976; Loevinger, 1976). It is the Individualist, Autonomous, and Integrated ego stages, however, that correspond to the post-conventional moral development stages and the abstract stages of conceptual development described by Hunt in the description that follows.

Conceptual Development

Conceptual systems as defined by Harvey, Hunt, and Schroeder (1961) describe four stages of cognitive complexity which characterize the ability of an individual to differentiate and integrate environmental stimuli and which relate to the ability of an individual to function adaptively and efficiently in a given environment.

Hunt (1976) built upon the original conceptual systems theory and defined Conceptual Level (CL) by degree of abstractness (differentiation, integration, and discrimination) as well as interpersonal maturity (increasing self-responsibility). A person scoring at a high conceptual level is more complex, more capable of responsible actions, and most important, more capable of adapting to a changing environment than is a person with a low conceptual level (Hunt, 1975, p. 187).

Hunt's successive developmental stages are reflected in the CL scoring system defined in Hunt, et al. (1973) as follows. The lowest stage is characterized by concrete negativism, lack of differentiation, overgeneralization and preoccupation with immediate gratification of personal need. Stage 1 represents responses containing categorical judgments (good-bad, right-wrong), overgeneralized and unqualified acceptance of a single rule, and reliance of external standards. Stage 2 represents responses which begin to show signs of self-delineation, express an awareness of alternatives and indicate sensitivity to the one's own feelings. The highest stage, Stage 3, represents responses which demonstrate a clear indication of self-delineations and reliance on internal standards, a sense of self in context or relationship with others, and the ability to take two viewpoints into account simultaneously.

Interpersonal Development

Robert Selman's (1980) theory of Interpersonal Understanding identifies five levels of Social Perspective Taking based on both the individual's cognitive capability and the social context. The five stages move from the undifferentiated egocentric stage to the in-depth societal symbolic stage. See Table 2 for a listing of levels of social perspective taking. Perspective Taking is one more structure within the hypothetical stage development constructs. Kohlberg theorized role taking as important to the moral development theory, but Selman has specified the development of perspective taking using the cognitive developmental models of Piaget and Kohlberg as well as the works of Flavell, Mead and Feffer.

Perspective coordination is a key idea. Social perspective taking includes developing understanding of how human points of view are related and coordinated. It is not simply role taking being defined as different perspectives of certain social or psychological information. Social perspective taking has an intrinsic social component. The social content is as inextricably and equally important as is the logical process or structure, which may, in turn, be its basis (Selman, 1980, p. 22). Social perspective taking represents a social-cognitive capacity for a person.

Selman's model of social perspective taking was utilized in the current study to investigate a theme which emerged during the second year of the project: a teacher's developmental stage affects the dynamics and outcome of the collaborative action research group process. The assessments of developmental stage were investigated as a predictor of thinking and functioning, and Selman's level of interpersonal functioning was used as a crosscheck in the investigation of the teacher's thinking about and acting in the process of the collaborative action research team. This study focused on the behavioral concommitants of underlying social cognitive capacity. As such it was less tied to demonstrating the validity of the stages and more tied to using the developmental model to provide a framework for understanding the growth and maturity of the observable social reasoning behavior on the collaborative action research team. This study thus attempted to order retrospectively the data observed and documented in social reasoning behavior during the natural working of the collaborative action research team in practice.

A recent review of developmental theory (Johnson & Oja, Report VIII, Appendix A) suggests the incompleteness of developmental theory in the area of interpersonal competence. In particular, interpersonal sensitivity is a missing element and the work of Selman was used to help address this gap and

Table 2

LEVELS OF SOCIAL PERSPECTIVE TAKING

	Concepts of Persons		Concepts of Relations
Level 0	Undifferentiated	and	Egocentric
Level 1	Differentiated	and	Subjective
Level 2	Self Reflective/ Second Person	and	Reciprocal
Level 3	Third Person	and	Mutual
Level 4	In-depth	and	Societal-Symbolic

expand the theory. Collaborative action research is an activity which requires members to take the perspective of others. Thus, the Selman model was suggested as one to be helpful in investigating the problem solving activities in a real world situation (like the collaborative action research team) and connecting the results to developmental theory. The Selman model was most important in this study in investigating developmental stage as a predictor of interpersonal functioning on a collaborative action research team and as a further avenue to differentiate individuals on the team. (Further explanation of Interpersonal Development theory as utilized in this study can be found in Sec. 4.4.)

3.2 Organizational Change and School Contexts

The Concerns Based Adoption Model (CBAM) (Hall, 1975) and I/D/E/A/ (Lieberman & Shiman, 1973; Betzen, 1974) studies suggest a necessary relationship between teacher change and school change. They justify a concentration on individual teacher concerns as a first step in the change process. Individual attention leads to personal involvement and establishes the content for dialogue.

Dialogue is a first step toward collaborative action which leads to further dialogue and evaluation. Collaboration provides a basis for organizational change. It also strengthens the individual teacher's sense of connectedness and importance to a group.

On the other hand, Sarason (1972) reminds us that one of the most difficult obstacles to recognizing the major problems in our schools lies far less in the characteristics than in that one cannot see culture or systems the way one sees individuals. Change efforts must respond to the way things are in the school and, at the same time, work to change those traditions which are dysfunctional and block necessary school change. This means studies of individual change must attend to contextual variables such as role definitions of the school, the normative relations among and within groups, the social climate of distance that permeates the school, the issues of power and control which dominate, the issue of isolation vs. colleagueship, the ambiguity of goals and processes, and the variety of arenas for interaction within and among groups.

Schools can be characterized as turbulent environments. The environment of any change effort in a school can be characterized by its complexity and unpredictability. The number of different variables which act upon a change project their own complexity. The fact that the roles of student and teacher disappear in a welter of different needs, motivations, values, interests, and characteristics the more involved the project becomes in the local system is evidence of a "turbulent" environment. "These are environments in which there are dynamic processes arising from the field itself which create significant variances for the component systems . . . dynamic properties that arise not simply from the interaction of the systems . . . where the dynamic field processes emerge as an unplanned consequence of the actions of the constituent systems" (Emery & Trist, 1973).

Each school has its own pre-history, programmatic and behavioral regularities, role definitions, time perspective and modal process for change. An understanding of these elements is a necessary precondition for studying individual change. The school is a social system. Quite simply, a social system is a complex and interdependent set of activities, interactions, and sentiments. We see the school as a social system in terms of four general understandings:

- Relations in schools are based on position within the organization; authority and power all derived from legality.
- Roles and tasks in schools are prescribed and clearly differentiated; division of labor is stressed.
- The social climate of schools is marked by social distance.
- Schools must respond to the larger social system of the external environment.

The school can also be considered as a workplace. The school as a workplace is extraordinarily powerful. The prevailing patterns of interactions and interpretations in each school demonstrably creates certain possibilities and sets certain limits. Those aspects of work that appear most consequential are those that are least often studied, least visible in any clear or systematic way to teachers, and least often addressed in programs of improvement. Most at issue are the norms of collegiality and experimentation in accounting for receptivity toward new ideas (Little, 1981).

A range of school context variables is to be considered in a study of individual change. Schlechty (1979) offers a conceptual framework for organizing theoretical constructs encompassing these variables. Sixty-six constructs are organized into twelve categories which can be used in identifying the contextual variables that impact on individual teacher change.

In summary, the contextual variables of the school which can affect individual teacher change are numerous and varied. Appendix E, Report IX describes School Context Variables and Collaborative Action Research in this study. Sec. 7.0 summarizes the findings on school context, new contexts and school change; and Sec. 8.0 investigates individual teacher perception of the school context.

To attend to and grasp the contextual variables of the school and their impact on teacher change requires a mode of research which can accommodate the nuances, subtleties, and convolutions of the changing situation of the school. School contexts and environments are dynamic. They shift and change and are affected by unpredictable events and forces. The serendipitous, unplanned, and unstable dimensions of the organizational and social context of the schools are difficult to capture with conventional research designs which too often reflect an objective and static view of ongoing shifting circumstances. Based on a review of the literature, investigators in this study believe collaborative action research offers an appropriate approach for the intellectual inquiry of school contexts and their impact on individual teacher change.

3.3 Collaborative Action Research

A complete review of the literature concerning collaborative action research can be found in Appendix A. Reports include A Review of the Literature: Collaborative Action Research by Smulyan and Collaborative Action Research: The Integration of Research and Service by Pine. If research outcomes are to be perceived as relevant and useful by practitioners and improvements in education are actually to occur (Clark, 1976; Elliott, 1977; Krathwohl, 1974; McLaughlin & Marsh, 1978; and Tikunoff, Ward, & Griffin, 1979), alternative approaches to educational research must reflect collaborative relationships among teachers and researchers.

Collaborative action research is characterized by several elements:

1. Research problems are mutually defined by practitioners and researchers.
2. University faculty and classroom teachers collaborate in seeking solutions to practitioner's problems.
3. Research findings are used and modified in solving problems.
4. Practitioners develop research competencies, skills, and knowledge; and researchers re-educate themselves in field-based and naturalistic research methodologies.
5. Practitioners, as a result of participating in the adaptation process, are more able to solve their own problems and renew themselves professionally.
6. Practitioners and researchers co-author research reports.

Collaborative action research liberates teachers' creative potential, stimulates their abilities to investigate their own situations, and mobilizes human resources to solve educational problems. Collaborative research begins when university faculty and teachers assist each other in developing the skills to identify and conceptualize problems.

> Collaborative action research is a process in which teachers and researchers work with parity and assume equal responsibility to identify, inquire into, and resolve the problems of classroom teachers. Such collaboration recognizes and utilizes the unique insights and skills provided by each participant while, at the same time, demanding that no set of capabilities is assigned a superior status. It assumes a work with rather than a work on posture - the latter being more frequently the modus operandi when teachers are asked to join researchers in a linear R&D endeavor.
>
> (Tikunoff, Ward, & Griffin, 1979)

The work on posture has been typical of traditional experimental research, which has been a technological process in which educational researchers keep the key decisions outside the school and away from teachers. This approach prevents teachers and the school from becoming the subject of their own transformation. Freire (1973) insists that methodological failings can always be traced to ideological errors. There is an implicit ideology of paternalism, social control, and non-reciprocity between experts and "helpees" which underlies traditional experimental research. (In the traditional research study one finds the word "subjects" interesting language, which suggests that someone must be the "ruler" or the manipulator.) If one adopts the collaborative action research model, which fosters dialogue and reciprocity, one must first be ideologically committed to equality, to the abolition of privilege, and to non-elitist forms of research leadership wherein special qualifications may be exercised but are not perpetuated.

Collaborative action research emphasizes the involvement of those who are traditionally "researched" to help identify problems, collect data, interpret information, and apply findings to solve problems. Collaborative action research answers the question of who has the right to create knowledge by arguing that the expected beneficiaries of research should design and carry out their own research. There are three assumptions underlying this approach: 1) parity in decision-making among researchers, trainers/developers, and practitioners; 2) respect for the unique perspective of each constituency; and 3) equal assumption of responsibility among each participant in the collaborative research and theory development process (Mergendoller, 1981).

Teachers participating in collaborative action research become agents of their own change. Teachers can use action research to grow personally and professionally, developing skills and competencies which empower them to solve problems and improve educational practice. Moreover, not only do teachers identify practical theories that apply to their own idiosyncratic settings but they also can formulate these practical theories as general hypotheses which have the potential for universal applicability.

Action research yields its own findings regarding the effectiveness of different research-based strategies in different situations with different pools of available resources and for different kinds of content. As Massanari (1978) suggests, "such findings should be collected, synthesized, and disseminated to the education community. They would be valuable and needed contributions to the knowledge base that supports education personnel development. Publications such as 'What's Working Where' and 'What Didn't Work Here' would be welcomed by the education profession."

Collaborative action research offers the opportunity for intensive involvement between researcher and practitioner. It offers mutual sharing and stimulation of curriculum developing, teaching, and measurement problems and the sense of participating in intellectually coordinated research on "large" educational problems (at least as contrasted to the more typical thesis and term paper topic). Of most importance, collaborative action research is substantial professional inquiry and scholarship in its scope, its epistemology, and its outcome. A practitioner with this orientation and skill in action research is no longer static or dependent on others for professional progress. The practitioner's own professional growth and competence is enhanced. Not only are practitioners likely to feel professionally alive, they may also feel effective in that they can do something about their profession. If action research meets these goals, then we are really describing a generic process of inquiry and growth for the education profession (Mosher, 1974).

Teachers can be trained in the collaborative process so they can produce knowledge from practice. The intellectual and professional process of producing new knowledge about problems in teaching, curriculum, and school change is the raison d'entre of action research. The issue here is that of tension between means (curriculum development or educational change) and an end, i.e., knowledge from and for practice and the training of people able to inquire professionally in this way about a wide range of issues in education. Producing knowledge from practice results from an alternating cycle of reflection and action, hard thinking, careful practice, and evaluation designed to generate a more comprehensive understanding of educational problems and their possible solutions (Mosher, 1974).

Collaborative action research is service, a process of concurrently inquiring about problems in education and acting on them. It assumes that educational practice is the first business of education, that there is a generic need to improve educational practice, and that the improvement of educational practice requires the confrontation of real problems in the school by conceiving alternatives and testing them out. Practice then becomes the crucible for innovation, an obtrusive measure of assumptions, speculations, and theories.

There is great promise in the pursuit of practical inquiry with the collaboration and mutual support of researchers and practitioners who together contribute to the solution of classroom problems and to the improvement of educational practice. The idea of such collaborative efforts was articulated by Schaefer (1967) in his book, The School as a Center of Inquiry, and demonstrated in the 1940s by Stephen Corey and others at Teachers College, Columbia University in action research projects which brought together teachers and professors primarily for curriculum development purposes.

Teacher-oriented inquiry and the view of the school and the classroom as the proper focus of research action will come about when researchers and teachers change their attitudes and preceptions about inquiry and research. McKenna (1978) speaks clearly to this point:

> . . . many researchers will have to revise their posture that scholars mustn't get their hands dirty with the clay; that the potting must be done by others, once the scholars have prescribed the clay mix and kiln temperature. More specifically, the attitude that you can't learn much in the 'messy' situation of the ordinary classroom will need to be replaced with one that accepts real schools as the most appropriate places for conducting research and development. And researchers will need to come to recognize teachers as peers, as colleagues, who have much to contribute to improving the R&D process, from identifying researchable issues, determining research design, data gathering and analysis, to planning programs based on findings. Once these are accomplished, new strategies for conducting research may need to be devised and tested in order to inquire into the multidimensional problems that are identified for study.

The integration of research and service through collaborative action research can help our schools become centers of inquiry where university faculty and professional teachers inquire systematically on such fundamental issues of what is to be taught, how, by whom, where and with what outcomes for students. The process of systematic inquiry constitutes effective and meaningful professional development. Significant learning and growth occur when teachers and university researchers work together in carrying out research to solve problems that concern themselves and the schools.

The school is the best laboratory for research. In one school building, there probably are more real researchable problems deserving the support and attention of funding agencies than one would imagine. Jackson (1968) says that the classroom teacher typically engages in as many as 1,000 interpersonal exchanges during the course of a six-hour day, frequently averaging 200-300 interpersonal transactions per hour. This observation in itself testifies to the complexity and immediacy of the daily situation in which every teacher is forced to make decisions. A single school is a research gold mine in terms of important questions, variety and richness of data, and numbers of potential researchers. Educational research must be fashioned from the fabric of the questions and problems of the school. The practical orientation of the school provides a research perspective that fits the unique and rich character of educational problems. The dominant chord of school and classroom-oriented research supplants the ethos of knowledge for the sake of knowledge, with inquiry that generates useable knowledge which spawns decision and action.

Paradoxically, it is the knowledge generated from practice that will enrich our conceptual understandings and educational theory. The action, reflection, teaching evaluation cycle feeds on itself epistemologically. Collaborative action research adds to both conceptualizing and practice by validating one against the other (Mosher, 1974).

Three prior collaborative research projects include the original Interactive Research and Development on Teaching Study (Tikunoff, Ward, & Griffin, 1981), the Interactive Research and Development on Schooling Study (Griffin & Lieberman, 1983), and the IR&D projects by Huling (1981). A description of the IR&DT, IR&DS, and Huling research studies follows.

The original IR&DT study (Tikunoff, Ward, & Griffin, 1979) was implemented at two sites - one in an urban setting in California, the other in a rural setting in Vermont. The California site team consisted of four teachers, one researcher, and one trainer/developer, all on the school district staff. The Vermont site included a university researcher, three teachers from one school district and two trainer/developers.

The IR&DT strategy was next used by Huling (1981) to establish collaborative study between researchers and staff developers from among the Texas Tech University and Teacher Corps staff and teachers from local school districts. A total of 13 teachers were divided among six teams based on their research interests and team member preferences. Each team consisted of one to three teachers, one university professor who served as researcher and one member of the Teacher Corps staff who served as staff developer.

Griffin, Lieberman, and Jacull-Noto (1980) proposed further study of IR&DT by extending it to three varying contexts. Called IR&D on Schooling, they established teams on which the schooling practitioners were: 1) teachers working out of a teacher's center, 2) representatives of several school districts working through an intermediate educational agency, and 3) high school teachers. The first team consisted of four teacher specialists in a teacher's center and a researcher and staff developer from Teachers College. There were four secondary teachers from two cooperative school districts on a second team; a researcher from Teachers College and a staff developer from the coordinating staff of an intermediate education agency serving the school districts. There were four elementary school teachers all from one school district on the third team: a researcher who was a teacher with a completed Ph.D. and a staff developer who was assistant superintendent for curriculum and instruction.

The current collaborative action research study under investigation, Action Research on Change in Schools (ARCS), is the most recent in a series of NIE-sponsored research activities on collaborative research. In this project, university researchers collaborated with the staffs of two public middle/junior high schools in which the practitioners have, under guidance, developed their own research questions, conducted appropriate studies, and are working toward programmatic changes as a result. Both schools' research activities focus on evaluation and management studies of school-based scheduling issues and their impact on teaching and learning conditions in the school.

In the Oja and Pine study (1981), the Michigan team consisted of five teachers from the same middle school, one university researcher, and a research assistant who also documented meetings. Two of these teachers were given responsibility as a part-time staff developer in their school during the second year of the project. In the New Hampshire team were five junior high teachers from the same school and a university researcher and a graduate research assistant/documenter. New Hampshire has no system of staff developers, but two of the teachers had experience on the Staff Development Council for the school district (one currently a member and one a founding member).

Emanating from consideration of collaborative action research is the research methodology for this study (see Sec. 4.0). The elaboration of research methodology describes the power of action research for addressing the processes of the study.

4.0 METHODOLOGY

4.1 INSTRUMENTS

To record and monitor the process of action research at each site, the following data sources were used:

1) audio recordings of all team meetings; transcripts of selected meeting tapes
2) documentation of all team meetings (using Schatzman & Strauss, 1973)
3) participant logs
4) participant questionnaires (pre-post)
    - Problem Identification Questionnaire
    - Research-Teaching-Development Questionnaire
    - Organizational Environment Assessment Instrument
5) participant interviews
    - September 1981 - baseline interview
    - December 1981
    - May 1982
    - December 1982
    - June 1983

Teachers were asked to maintain participant logs over the life of the project. In the initial meetings, teachers were given questions to respond to in their logs related to the context of the school; decision-making; change in teachers, students, and the school; and throughout the project, teachers were encouraged to record their personal reflections and reactions to events in the school and the action research team. The investigators collected log comments monthly. A sample of two teachers' logs appears in Appendix B, "Teacher Logs." The Instruction Sheet for maintaining a log and the initial structured log questions appear in Report II, Appendix E, _Beginning a Collaborative Action Research Project_. The participant questionnaires can be found in Appendix B as well as the interview schedules.

Planning and Design Features

This study has documented teachers' perceptions and allowed their voices to come from the interviews, logs, transcripts, and data documentation of collaborative research team meetings. In this project, teachers undertook all design and implementation and analysis steps in a collaborative research project.

Reading teachers' remarks as they have been woven into the analysis in the final reports helps one to understand the differences in the way in which teachers perceive issues in the collaborative group process and research process. In addition, the intensive analysis of five teachers on one team (the New Hampshire team) at different stages of development uses the teachers' remarks to help the reader recognize how a teacher's developmental stage may be a lens (or world view) through which the teacher makes meaning of his/her school environment and the temporary system of the collaborative research team.

Teachers' voices are heard in a different way by referring to the theoretical model of cognitive-developmental stages. Thus, greater impetus was given to getting individual teacher's perceptions and to presenting these perceptions in the teacher's own remarks.

Developmental Stage Questionnaires

To select participants, all interested volunteers in two schools were asked to respond to an Educational Experiences Inventory and three empirical measures of developmental stages: the DIT of moral judgment, the WUSCT of ego development and the CL test of conceptual complexity. The characteristics of teachers according to their developmental stage scores were also used to examine individual teacher participation in and perception of issues related to the collaborative research process. Each of the developmental stage questionnaires is described further in the following section of this report and is included in Appendix B.

The *Defining Issues Test* (DIT) of moral development (Rest, et al., 1974) is an objective test of moral reasoning which assesses the basic conceptual frameworks by which a person analyzes a social-moral problem (dilemma) and judges the proper course of action. The DIT presents a moral dilemma and a list of definitions of the major issues involved. The DIT is based on Kohlberg's (1969) theory of six stages of moral reasoning but uses a multiple choice, rating and ranking system instead of a moral judgment interview. It can be easily administered to groups, objectively scored, and has been researched with firm reliability and validity levels (Rest, 1974).

The DIT is based on the assumption that individuals at different developmental stages perceive moral dilemmas differently and will choose different statements as the "most important" issues to be considered in making a decision about the dilemma.

The DIT used in this study consisted of six dilemmas (stories). Each story had 12 statements (or issues); the subject was asked to rate first each statement on a five-point scale from "great importance" to "no importance" and then to rank order the four most important choices (complete scoring system is described in Rest, et al., 1974). Since each issue statement represents a moral judgment stage, a subject's choices of the most important issues over a number of moral dilemma stories was taken as a measure of his/her grasp of different stages of moral reasoning.

Rest (1976) reports that the most useful single index he has found in research with the DIT is the combined weighted ranks of items keyed as stages 5A, 5B, and 6. This composite score is called the Rank-P score. The "P score" represents the relative importance a subject gives to principled moral considerations in making moral decisions and corresponds to Kohlberg's post-conventional level. It is a continuous variable ranging from 0 to .95.

Rest (1975) reports a 0.68 correlation between the DIT and Kohlberg's measure of moral judgment in a sample of 47 Ss aged junior high to adulthood. The DITs in this study were scored on Rest's computerized scoring program available from the DIT project office. Rest and Davidson (1979) have classified P scores into quartiles which range from 0 to .38 as low P; .39 to .58 as moderately low P score; .59 to .77 as moderately high P score; and P greater than .77 as high P score.

The Washington University Sentence Completion Test (WUSCT) of ego development (Loevinger & Wessler, 1970) is based on the assumption that each person has a core level of ego functioning. The purpose of the test is to determine this core level by assigning an ego level based on the distribution of a person's ratings or responses to the item in the test. Reliability and validity data for the WUSCT are reported in Redmore and Waldman (1975) and reviewed further in Hauser (1976).

A single protocol rating for this study was assigned by matching an intuitive rating with a total Protocol Rating (TPR) assigned according to a set of "ogive rules." This is described as the "non-automatic" or "intuitive TPR" scoring scheme and is recommended when the rater is highly experienced.

All ego development tests were given code numbers, randomly sorted with identifying information deleted, and scored for ego level. All protocols for this study were scored by a highly experienced Loevinger-trained rater who has achieved interrater reliability on final TPR scores of .93 on previous rating jobs.

The WUSCT Form 9-62 for women and Form 10-68 for men were employed and scored according to the ogive intuitive procedure. This study used the typical 36-item test. The item-sum rating has been suggested as an alternative to the ogive-sum rating for the WUSCT of ego development. This method has the disadvantage of yielding values which are more likely correlated with verbal fluency than either the ogive-automatic rating or the ogive-intuitive rating (Loevinger & Wessler, 1970). Consequently, the item-sum method was not used. The final Total Protocol Rating (TPR) scores assigned teachers' scores to one of the seven stages of ego development or to a transitional level between two stages.

The *Paragraph Completion Test* (PCT) developed by Hunt, Greenwood, Noy, and Watson (1973) was used in this study to measure teachers' conceptual levels (CL). The PCT uses a semi-projective format in which the S is required to project his or her own frame reference within the areas of: (1) conflict or uncertainty ("When I am criticized," "When I am not sure," and "When someone does not agree with me") and (2) rule structured and authority relations ("When I think about rules" and "When I am told what to do"). Respondents are given three minutes to write at least three sentences to complete each of the above five phrases. Each of the five conceptual level stems was coded with a score from 0 to 3 (Stages "Sub 1 to 3") according to a manual developed by Hunt, et al. (1973).

Strong validity and reliability data are reported for the PCT (Hunt, 1971; Schroder, Driver, & Streufert, 1967; Gardiner & Schroder, 1972).

Schroder (1967, 1971) found that persons with high conceptual level scores showed less tendency to engage in black and white thinking, greater ability to integrate multiple perspectives, less rigidity of judgment, greater independence of judgment, and greater tolerance of ambiguity and conflict than did groups with lower conceptual level scores. These characteristics have been described as the postconventional moral stages and the high ego stages.

Studies done by Hunt and Associates (see summary in Report VII, Appendix A) have related teaching styles and teaching characteristics to teachers' stage of conceptual development. These authors have used two basic methods to obtain a single score from the five stem scores. The "Top 3 CL" score is the average of the three highest scores obtained, and the "Total CL" score is the average of all scores. The "Top 3 CL" method was used in the present study, as it was considered to be more similar to the WUSCT ogive-intuitive ego score and the DIT P-score methods. Hunt has classified scores which range from 0.5 to 1.0 as representative of low conceptual level, 1.1 to 1.4 as moderately low conceptual level. 1.5 to 1.9 as moderately high conceptual level. and 2.0 and above as high conceptual level. The PCT questionnaire was scored at the Ontario Institute for Studies in Education by a Hunt-trained rater. Interrater reliability reported by OISE raters is above 0.90.

Procedure

The developmental test materials were administered on one afternoon in September 1981, in a group session of all teachers interested in the collaborative research project. One group met at the New Hampshire site and one group met at the Michigan site. The DIT of moral development was followed by the PCT of conceptual level and then by the WUSCT of ego development. For the PCT there was an approximate time limit of three minutes per item, for the DIT and WUSCT there was unlimited time for completion.

Selection of Collaborative Research Team Members

Participants for the two collaborative research teams were selected to represent a variety of ego development stages. Table 3 lists the cognitive/developmental scores given at the outset of the project in 1981 for each of the 10 teachers selected for the project. Teachers are referred to by self-chosen aliases in order to protect their confidentiality. Characteristics of stages of ego development are shown in Table 4.

Teachers in the collaborative research teams vary over four consecutive ego level stages: the Conformist Stage, the Self-Aware Transition, the Conscientious Stage, and the Individualistic Transition. Teachers scored at moderately high or high levels of conceptual complexity, and they scored at low, moderately low, or moderately high levels of principled moral judgment.

Table 3 indicates that there is not a clearly systematic relationship between ego level and conceptual level and/or moral development level (at least as measured by the PCT and the DIT).

Jane Loevinger states that a certain stage of moral development is a necessary prerequisite, but not a sufficient condition, to predict a parallel stage of ego development (Loevinger, 1976).

Data in Table 3 show that teachers at one stage of ego development do not necessarily score in a manner similar to one another on the other two scales except at the extremes; i.e., the Conformist Stage and the Individualistic Stage indicate more similarity between scores on the separate scales.

Seven of the selected teachers scored at the I-3/4 or I-4 ego stage, four in the Michigan collaborative action research team and three in the New Hampshire action research team. For comparison purposes, note that Redmore and Waldman (1975) indicate that in an adult group a typical distribution would show 90% of the WUSCT scores at Stage I-3/4 or I-4. McCrae and Costa (1980), in a random sample of adult males, ages 35-80, found 83% scored at either I-3/4 or I-4. In four previous studies with persons aged 11 to 60, more persons scored at I-3/4 than at any other stage (Haan, et al., 1973; Harakel, 1971; Lambert, 1972; and Redmore & Waldman, 1975). A previous study with 30 teachers aged 23 to 58 indicated that 87% of the teacher sample scored at I-3/4 or I-4, with one-third classified as I-3/4 and 53% classified as I-4 (Oja, 1982). In this study, as in the previous studies with teach-

Table 3

Cognitive-Developmental Stage Scores:
Washington University Sentence Completion Test of Ego Development, Paragraph Completion Test of Conceptual Level, and Defining Issues Test of Moral Judgment

	Sex	Team	WUSCT[a]	PCT[b]	DIT[c] %P
Jack	M	NH	5	1.5	32%
Lori	F	MI	6	1.5	32%
Anne	F	MI	6	2.0	43%
Jim	M	MI	6	1.8	25%
Ted	M	NH	6	2.3	63%
Florence	F	MI	7	1.7	32%
Brooks	F	NH	7	2.0	40%
John	M	NH	7	2.0	46%
Jane	F	MI	8	2.0	58%
Elliot	M	NH	8	2.2	75%

[a] Loevinger's SC-18 ego level scores have been transformed into a 1-10 interval value according to the following convention:

Ego level:	1	2		3	3	3/4	4	4/5	5	6
Interval value:	1	2	3	4	5	6	7	8	9	10

[b] Hunt's Paragraph Completion Test of Conceptual Level generates scores that can range from 0 to 3. Scores of 1, 2 or 3 on this test may be interpreted as indicating the following conceptual levels:

Score of 1 = Categorical judgments, stereotyped thought. Other directed; accepts single rules.

Score of 2 = Self delineation, awareness of alternatives, & awareness of emotions.

Score of 3 = Abstract internal principles, awareness of multiple viewpoints.

[c] Rest's %P score represents the percent of principled moral judgment (i.e., Postconventional stages 5A, 5B, 6) in a person's total responses to the Defining Issues Test.

Table 4

Loevinger's Stages of Ego Development*

The stages of ego development, as described below, are not tied to given ages. Instead, each stage is defined by the characteristics common to all persons at that stage regardless of age. The stage names represent characteristics that are most predominant at that stage, although these same characteristics may be present, to a greater or lesser degree, at all stages. However, in order to adequately define a stage, the total pattern of characteristics must be present. For example, an individual who evidences impulsiveness is only designated "impulsive" if the whole pattern of characteristics of that stage is demonstrable.

The *Presocial* stage is symbolized in a newborn baby who has not yet developed an ego. As the baby begins the process of separating his/her self from his/her surroundings, the construction of reality and, thus, the formation of the ego begins. The child who fails to differentiate the world of inanimate objects from self in an appropriate time interval is called autistic.

At the *Symbiotic* stage, the child maintains a symbiotic relationship to his/her primary caregiver while continuing the significant separation of self from non-self in the stable world of objects. Language is an important variable in the baby's progressive sense of self as a separate person.

At the *Impulsive* stage, the child uses bodily impulses to continue and maintain the formation of a separate identity. When the impulses dominate behavior, control is effected through external constraint and immediate rewards and punishments. Persons who remain at this stage are strongly dependent and demanding; others are valued by what they can "give to" the individual. Value judgments are in terms of absolutes, i.e. people are either good or bad. The present predominates, with little sense of past or future. Aggressive behavior and temper tantrums exemplify the intense, impulsive reactions of this stage, and an individual's problems are attributed to others rather than one's self or circumstances in one's situation.

At the *Self-Protective* stage, persons begin to control their impulsiveness and learn to anticipate rewards and punishments. Rules are recognized at this stage and used for one's own advantage. The self-protective individual's main rule is "don't get caught." Blame is placed on other individuals or the circumstances when satisfaction is not achieved. Persons who stay at this stage maintain manipulative and exploitive interpersonal relations and thus tend to be opportunistic, deceptive, and preoccupied with control and advantage.

*Oja, Sharon Nodie. Adult Development Is Implicit in Staff Development. Journal of Staff Development, Vol. I, No. 2, October, 1980, pp. 21-24.

> Most people at some time in childhood or adolescense move to the *Conformist* stage as they begin to place strong trust for their welfare in the family group, the peer group, or in socially-approved norms. Rules are obeyed simply because they are group-accepted rules. Belonging is of utmost importance. Feelings of disapproval and shame are crucial issues at this stage. Behavior is viewed in terms of external actions and concrete events rather than feelings and inner motives. Personal emotions are expressed through cliches, stereotypes and moralistic judgments. The individual who remains at this stage is preoccupied with appearance, social acceptance, and reputation.

Recent research studies found experienced teachers stabilized at the next stages in Loevinger's paradigm, at the Self-Aware ego stage (Bernier & Sprinthall, 1976) or at the Conscientious ego stage (Oja & Sprinthall, 1978). Other researchers also report the Self-Aware ego level to be the most predominant adult ego level (Hauser, 1976; Loevinger, 1976). The qualitative differences that distinguish the Self-Aware transition level from the Conformist and the Conscientious stages are summarized below.

> At the *Self-Aware* transition level between the prior Conformist stage and the subsequent Conscientious stage there is an increase in self awareness and beginning appreciation and understanding of multiple possibilities, alternatives, and options in problem-solving situations. Growing awareness of inner emotions enhances the capacity for introspection (crucial at subsequent stages), although at this stage feelings continue to be expressed in vague or global terms. Growing self-confidence and self-evaulated standards at this stage begin to replace group standards as guidelines for behavior.
>
> At the *Conscientious* stage a person is capable of self-criticism. This combined with long-term, self-evaluated goals and ideals and a sense of responsibility form the major elements of the adult conscience, all evident at this stage. Rules are internalized; guilt is the consequence of breaking inner rules. Exceptions and contingencies in rules are recognized in direct relation to a growing awareness of the subtleties of individual differences. Behavior is seen in terms of feelings, patterns, and motives rather than simply actions. Achievement, especially when measured by self-chosen standards, is crucial. Persons at this stage are preoccupied with obligations, privileges, rights, ideals, traits, and achievement, all defined more by inner standards and less by the need for external recognition and acceptance.

It is the Individualistic level and the Autonomous and Integrated stages, however, that incorporate the advanced principled judgment stages of Kohlberg's theory of moral reasoning and the higher, more complex, abstract stages of cognitive development described by Piaget. The Individualistic transition level and the Autonomous stage have the following characteristics.

> At the *Individualistic* level, a sense of individuality is of utmost concern, especially as it is coupled with heightened awareness of emotional dependence on others. A person at this level tends to have more complex responses than people at earlier developmental levels. There is increased ability to tolerate paradoxical and contradictory relationships between events in contrast to earlier stages where individuals attempt to eliminate paradoxes by reducing them to polar opposites. There is also greater complexity in conceptualizing interpersonal interactions. Interpersonal relationships are highly valued in contrast to the cherishing of ideals and achievements at the Conscientious stage previous to this one.
>
> The distinguishing characteristic at the *Autonomous* stage is the individual's capacity to tolerate and cope with the inner conflict that arises between conflicting perceptions, needs, ideals, and duties. A person at this stage is able to unite ideas that appear as ambiguous or incompatible options to persons at prior stages. In particular at this stage, the individual acknowledges other persons' needs for autonomy to make their own choices and solutions and to learn from their own mistakes. At the same time, the autonomous person realizes the limitations of autonomy; consequently, mutual *inter*dependence is highly valued in interpersonal relationships. The person at this stage is concerned with self-fulfillment, differing perceptions of one's role, and issues of justice in addition to being concerned about the individuality and achievement issues of prior stages.
>
> The *Integrated* stage is the hardest to describe because cases are rare. To be sure, the characteristics of the Autonomous stage are in evidence at this stage. In addition, there is evidence of consolidation of a sense of identity as in Maslow's self-actualizing person. A person at the Integration stage also has the capacity to reconcile conflicting demands, to renounce the unattainable, and to truly cherish individuality.

Loevinger's stages can be compared with Kohlberg's levels of moral judgment. The preconventional moral judgment level is included in the symbiotic, impulsive, and self-protective ego stages. The conventional level is included in the conformist and conscientious ego stages. The post-conventional moral judgment level is reflected in the individualistic, autonomous, and integrated ego states ers (Oja, 1978; Oja, 1979), the highest score on the WUSCT documented in pretest data was I-4/5.

4.2 Participants

Personal Information about Teachers

Ten teachers were chosen to participate in the ARCS project; five teachers from New Hampshire and five from Michigan.

Five of the teachers are male and five are female - four males and one female in New Hampshire and one male and four females in Michigan. Two of the teachers are single, seven are married, and one is divorced. Of the married and divorced teachers, six have children. Five of the 10 teachers report reading no professional periodicals; the remaining five teachers report reading a variety of teacher educational journals. All of the teachers read a wide variety of popular periodicals with Time, Newsweek, and local newspapers mentioned most frequently. Responses varied when asked about hobbies. Athletic interests such as running, racquetball, swimming, tennis, basketball, and bowling were mentioned. Home-centered activities included cooking, sewing, gardening, and a wide variety of crafts. Five of the teachers reported reading as a hobby. Tables I and II on pages 4 and 5 of Report I, Initial Description of Participants and Sites, in Appendix E summarize this personal information about the teachers.

Academic Background of Teachers

All of the 10 participating teachers have earned Baccalaureate degrees with an additional 15 to 30 credits. Four teachers from New Hampshire and two teachers in Michigan have Masters degrees in the field of Education. Two of these teachers have earned 15 credits beyond their Masters degrees. New Hampshire teachers earned their degrees from universities in New Hampshire or Maine. Four of the Michigan teachers earned their degrees from universities in Michigan; the remaining teacher, Florence, received her degree from a college in Mississippi.

When asked to make an assessment of their professional education, four of the five teachers in New Hampshire responded positively with comments such as "well rounded, very good education," "very practical, prepared quite well." In Michigan, only Florence responded with a very positive comment ("Excellent"). Three of the Michigan teachers believed their education did not prepare them for teaching.

In summary, (1) all but four of the 10 teachers have earned their Masters degrees; (2) New Hampshire teachers earned their degrees from universities in New Hampshire or

(Table 1)

New Hampshire ARCS Teacher Participants

Personal Background

Teacher	Marital Status	Number of Children	Periodicals Read		Hobbies
			Professional	Popular	
Brooks Johnson	Married	0	Reading Teacher Journal of Reading Learning Magazine	Runners World Runner Boston Globe	Running Swimming Cooking Sewing Photography
Ted Williams	Married	2	NTA NEA Journals	Boston Globe Life	Sports Reading Collecting coins Baseball cards
Elliot Rosewater	Married	2	None	Boston Globe Newsweek	Basketball Tennis
Jack D. Part	Married	2	None	Consumer's Guide Newsweek Time Boston Globe	Real estate Chairman of Board of Selectmen Gardening
John Alden	Divorced	1	None	Reader's Digest Fish & Game Mass. Wild Life New York Magazine	Reading

Table 5A

Table 5A (continued)

(Table 11)

Michigan ARCS Teacher Participants

Personal Background

acher	Marital Status	Number of Children	Periodicals Read		Hobbies
			Professional	Popular	
[illegible] al	Single	0	None	*Time* *Newsweek* *Runners World*	Running Racquetball Leaded glass Union activities
e Sulak	Married	2	*Today's Education* *MEA Journals*	*Time* *People* *Detroit News*	Camping Reading Gardening
rence k	Single	0	Reads about 23 periodicals	*New Yorker* *Matinsionl* *Atlantic Monthly* *Ms.* *Time* *Detroit Free Press* *New York Times*	Reading Cooking Traveling
[illegible] el	Married	0	*Today's Education* *MEA Journals* *English Journal* *Magazine for Gifted Learners*	*Better Homes & Gardens* *Good Housekeeping* *1001 Home Decorating Ideas* *Glamour* *Detroit News* *Detroit Free Press*	Reading Rug hooking Interior design Bowling
	Married	4	None	*Time* *Games*	Collects antique porcelain dolls Bird watcher Collects rocks Sewing Building a house

Maine; Michigan teachers, with the exception of one, earned their degrees from universities in Michigan, and (3) interview data suggests that New Hampshire teachers assess their education more positively than the teachers from Michigan.

Professional Background and Present Positions of Teachers

The teachers' experience at the New Hampshire and Michigan sites ranges from three to 23 years. Their overall educational experience ranges from nine to 23 years. Using the criteria of five years or more of practice to indicate an "experienced teacher," all of the teachers are experienced.

Of the teachers from New Hampshire, only Jack has gained his entire teaching experience at this junior high. Brooks has an additional three years experience working with the mentally retarded and as an instructional assistant. Ted has 12 years experience outside of the New Hampshire site, mostly at elementary schools in Maine. This experience included coaching and a principalship. Elliot has four years of teaching and coaching experience at the secondary level in schools in Maine. John has eight additional years experience at the junior high level in schools in New Hampshire.

Three out of the five teachers from Michigan have gained their entire teaching experience of 10, 12, and 23 years at the Michigan middle school. Jim taught the fourth grade for one year before joining the middle school and Jane has 10 years experience at the elementary level, both schools located near the Michigan middle school.

Four of the five New Hampshire teachers teach one subject to one grade. One teacher teaches social studies, one teaches science, and two teach math. All of them teach at the eighth grade level. The remaining teacher teaches seventh and eighth grade reading.

Of the Michigan teachers, only one teacher, Florence, teaches a single subject, English, to the seventh and eighth grades. Jim teaches reading, math, and history at the sixth, seventh, and eighth grade levels. Anne teaches science and reading to seventh and eighth graders. Lori teaches English and reading at the seventh and eighth grade levels. Jane teaches science, math, reading, and art to sixth and eighth graders.

In summary, it can be concluded that: (1) all 10 of the teachers are experienced; (2) the teachers' experience included work at the elementary and secondary levels; (3) the New Hampshire teachers have a total of 27 years experience outside of the New Hampshire junior high; two gained this outside experience in Maine; (4) the teachers from Michigan, for the most part, have gained all of their experience at the Michigan middle school; the exceptions have taught in schools

New Hampshire ARCS Teacher Participants
Educational Background and Research Orientations

Teacher	Education	Professional Experience	Previous Research and Training	Views Regarding Educational Research
Brooks	B.A. M.A.	1 yr. working with mentally retarded 2 yrs. instructional assistant 6 yrs. JHS	Title I, educational background in experimental design and methods, writing of grants	Topics are too narrow Wonder whether it can be duplicated Teachers need more time to do their own research
Ted	B.S. M.A.	10 yrs. elementary schools in state 2 yrs. principal 3 yrs. JHS	Developed reading and sports programs	No information available
Elliot	B.S. M.A.	4 yrs. secondary schools in state 7 yrs. JHS 2 yrs. part-time administrator Became high school teacher 1982	Mathematics Accountability Testing Committee Independent research on teacher learning style	Improve education Teachers should do the research
Jack	B.A. M.A.	17 yrs. JHS 12 yrs. part-time administrator up to 1981 Becomes a principal of another school midway in ARCS project 1982	Project funded to investigate school problems Teacher Corps project	Improve level of education Identify a problem and not talk in generalities Waste of time if doesn't result in effective change
John	B.A.	8 yrs. junior high in state 11 yrs. JHS	Development of own courses Teacher Corps project TRACT program	No impressions

Table 5B (continued)

Michigan ARCS Teacher Participants
Educational Background and Research Orientations

Teacher	Education	Professional Experience	Previous Research and Training	Views Regarding Educational Research
Jim	B.S. M.A.	1 yr. elementary school 8 yrs. middle school Becomes part-time staff developer 1982	Skills Diffusion program Generic skills	Very suspicious Needs to be looked at very carefully Has too many variables
Anne	B.A.+18 credit hours in Education	10 yrs. middle school	Generic skills Science curriculum development	Sounds abstract Not something able to use or meaningful Should have teachers more involved
Florence	B.A. M.S.+18 credit hours	23 yrs. middle school	Curriculum planning Inservice training programs	Researchers telling teachers what to do Teachers should define the problems
Lori	B.S. M.A.	12 yrs. middle school Became part-time staff developer 1982	Steering Committee K-8 English Coordinator Leadership training Chairperson of professional staff development Generic skills	Researchers defining problem Can't generalize from one situation to next Teachers should define
Jane	B.A.+30 credit hours	10 yrs. elementary school 6 yrs. middle school	Generic skills	No impressions Should involve teachers

in the immediate geographic area; (5) the teachers from New Hampshire all teach one specific subject and only one teacher teaches more than one grade level; and (6) of the teachers from Michigan, only one teaches one specific subject while the remaining teachers have as many as four subjects to teach. All of the Michigan teachers teach two or three grade levels (see Tables III and IV on pages 7 and 8 of Report I, Appendix E).

Background of Researchers and Research Assistants

Personal and professional background of the university researchers and research assistants on the ARCS teams is presented in Tables V and VI on pages 10 and 11 of Report I, Appendix E.

The New Hampshire and Michigan researchers (Sharon N. Oja and Gerald J. Pine) conceptualized the ARCS project and acted as co-investigators of the collaborative action research process study. The New Hampshire researcher, in addition, was director of the ARCS project and ran the project office at the University of New Hampshire. Both researchers are highly experienced in their university roles as developers in the formulation and implementation of inservice education programs. They have worked together in this capacity in a prior two-year federally funded project. Both Oja and Pine are also skilled in quantitative and qualitative research methodologies. The university researchers provided research orientation, assistance, and training to the action research teams. They facilitated the team meetings and conducted interviews with individual team members.

The research assistants' (Lisa Smulyan and Sally Whitty) main task was to document the ARCS team meetings. In addition, they assisted in any questions of research design and methodology and aided in related library research. The New Hampshire research assistant has experience in middle school teaching; the Michigan research assistant has not. Both have had previous research assistantships on other research projects.

Further description of participants in terms of research skills and prior research and training activities can be found in Appendix E, ARCS Report I.

Life/Age Cycle Characteristics of Teachers

A profile of each individual participant would be incomplete without data concerning the career phase and age-related phase of adult development. A full report on the life/age cycle characteristics of teachers participating in this collaborative research project can be found in Report VII in Appendix E as a supplemental report to this study.

(Table 4

Personal Background of Researchers

rsearcher	Marital Status	Number of Children	Periodicals Read		Hobbies
			Professional	Popular	
chigan					
rald J. Pine	Married	3	American Psychologist Personnel & Guidance School Counselor Chronicle of Higher Education Journal Counseling Psychologist Journal of Staff Development American Educational Research Journal Personality and Social Psychology	Runners World Time National Geographic Atlantic Harpers New York Times Detroit Free Press Education Weekly	Running Reading
lly Whitty	Married	1	None	People Time	Horseback riding Arts and crafts Gardening
w Hampshire					
aron N. Dje	Married	0	Review of Educational Research Educational Researcher Theory Into Practice Journal of Teacher Education Action Journal of Staff Development	New Shelter Psychology Today Ms. Organic Gardening National Geographic Smithsonian Education Weekly Chronicle of Higher Education	Jogging Skiing Sailing Gardening
e Mulvan	Single	0	Harvard Educational R. Phi Delta Kappan	Ms. Time	Reading Tennis Cooking

(Table VI)

Educational and Professional Background of Researchers

esearcher	Education	Experience	Previous Research and Training
ichigan			
erald	B.A. Boston College M.Ed. Boston College Administration Ed.D. Boston University Counseling Psy.	7 yrs. public school teaching and counseling 16 yrs. higher education professor and administrator 3 yrs. Director, Teacher Corps 3 yrs. Director, EPDA program	Research training at Masters and Doctoral levels Research publications Monographs and articles
lly	B.S. Oakland University (expected April 1982)	2 yrs. Sales Training and Recruiting	Research assistant - Psychology Research assistant - Education
w Hampshire			
haron	B.A. Macalester College M.A. University of MN Ph.D. University of MN	3 yrs. high school math teacher 2 yrs. college math instructor 7 yrs. Director, Peer Teaching in Math and Science program 2 yrs. university teacher trainer [illegible] yrs. university assistant professor of Education	Research assistant - Educational Research and Development Evaluator - teacher education projects Research publications, studies BEH Study
se	B.A. Swarthmore College M.A.T. Brown University Ed.D. Harvard University (in progress)	3 yrs. seventh grade teaching 3 yrs. Methods instructor Brown University M.A.T. program 2 yrs. Study Skills consultant	Curriculum development, English and social studies NIE moral development study at Harvard University Other research related to doctoral work

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The following brief discussion of the life/age cycle methodology is in the form of excerpts from that report, adding for consideration both pre-test and post-test data.

An examination of teacher life/age cycle provided another framework to describe project participants. An Educational Experiences Inventory (see Appendix B) was used as a pre-test and post-test. The data yielded information on teacher's life phases, their perceptions of these phases, perceptions of stability and transition in their lives, and importance of personal and/or career goals. The data were analyzed to investigate the relationship of life phases to teachers' reasons for participating in the collaborative action research team.

These teacher characteristics are summarized in the tables which follow and described further in Report VII, Life/Age Cycle Characteristics of ARCS Teachers, Appendix E.

Table 6A describes each team member's life/age phase and his or her perception of stability or transition within that phase. On the post-test both Elliot and Florence shifted from a perception of "transition" to a perception of "stability" within their life phase. All other teachers indicated no shift.

Table 6B shows the titles teachers give to previous, present and future life phases in both pre- and post-tests. Jack and Jane did not take the post-tests. Both left the project after the first of two years. Ted did not complete this question on the post-test. Comments of Elliot, Anne, John and Florence reflected few differences on the pre- and post-tests. Responses of Jim, Brooks, and Lori, however, all in the thirties transition at the pre-test, indicated that they perceive themselves as settling down at the time of the post-test.

Table 7 summarizes teachers' responses to 13 questions about critical issues in their lives. For each question, teachers responded on a 5-point scale as to whether the issue was: (5) very important - a key issue now, (4) becoming increasingly important, (3) somewhat important, (2) just beginning to be important, or (1) not an issue now. Table 7 lists data only from those issues rated very important (5) or increasingly important (4) on the pre-test. On the post-test, these issues (5) and (4), as well as those issues which had become less important, are indicated.

Table 6A

Teachers' Perceptions of Stability and Transition by Life Phase

Life Phase	Stability	Both	Transition
Age Thirty Transition (N=3)			Jim (9 yrs exp) Brooks (9 yrs exp)
Settling Down (N=1)			*Elliot (11 yrs exp)
Becoming One's Own Person (N=3)	Anne (10 yrs exp)		**Jack (17 yrs exp) Ted (15 yrs)
Mid-Life (Forties) Transition (N=1)	professional stability	**Jane (16 yrs exp)	personal transition
Restabilization (N=1)	John (19 yrs exp)		
Transition to Fifties (N=1)			*Florence (23 yrs exp)
Total	2	1	7
	20%	10%	70%

*On the post-test, both Elliot and Florence shifted from "transition" to "stability" within their life phase. All others indicated no shifts.

**Jane and Jack left the team after Year 1.

Table 6B

Chapter Headings by Life Phase

Life Phase/Age		Period Just Left	Present Period	Next Period
Thirties Transition				
Jim (30)	pre:	"Settling"	"Thirty and Wandering"	"Decisions, Decisions..."
	post:	"Change"	"Awareness"	"Settling"
Brooks (33)	pre:	"Isolation"	"Consolidation"	"Exploration"
	post:	"Stalled on the Highway of Life"	"Personal Power - Getting On With It"	"Starring Brooks as Herself"
Lori (34)	pre:	"Discontent"	"Thirty and Out"	"Nirvana"
	post:	"Optimism Abounds"	"Mid-Life Crisis"	"Getting Older and Better??"
Settling Down After 30s Transition				
Elliot (34)	pre:	"Frustration"	"Moving On"	"Living Comfortably"
	post:	"Restlessness"	"Accomplishment and Recognition"	"Satisfaction"
Becoming One's Own Person				
Jack* (38)	pre:	"Transition"	"Happy"	"Growth"
Anne (38)	pre:	"Learning and Adjusting"	"A Stable Life - A Good Teacher"	"A Better Life - A Better Teacher"
	post:	--	"Stability"	--
Ted (39)	pre:	"Consolidating Work and Personal Goals"	"Future-Oriented"	"Independent"
	post:	--	--	--
Mid-Life (Forties) Transition				
Jane* (42)	pre:	"Disequilibrium"	"Threshold"	"Autonomy and Harmony"
Restabilization				
John (41)	pre:	"Trying to Swim"	"Surviving"	--
	post:	"Turmoil Part II"	"Waiting for Graduation"	"Retired"
Transition to Fifties				
Florence (45)	pre:	"Aggravation Unlimited"	"Everything in Its Place"	"?"
	post:	--	"Play It as It Lays"	--

*Jack and Jane left the teams after Year 1.

Table 7

CRITICAL ISSUES BY LIFE PHASE	Separating myself from my family and/or my parents' expectations		Seeing myself as an adult becoming part of the adult world		Starting a career and/or exploring family or community roles		Parenting . . . relating to my children as I'd like (or deciding to be a parent)		Developing my sense of myself as an adult		Making deeper investments in my choices for life and in my setting long range goals and meeting them		Becoming recognized for my contributions and achievement in roles I value		Becoming my own person with identity and direction, not dependent on boss, spouse, colleagues, critics, or mentors		Changing my activities and routines to reflect more realistically the person I am and what I want from my life and work		Sharing my knowledge and skills, contributing to the next generation, being helpful to younger friends and associates		Sharing everyday human joys with others; maintaining warm relationships with friends, family, spouse, and colleagues		Accomplishing a few important things in the time period I have left		Accepting what has happened in my life as "plus"; valuing myself	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pr	Po	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pr	Po	Pre	Po
GETTING INTO ADULT WORLD																										
THIRTIES TRANSITION																										
Jim (30)					4	4		4	4	4	5	4			4	4				4	4	4	4	4	4	
Brooks (32)				5	5*	4	4	4		5	5*	5	5*	5			5	5	5	5	5*	5	5*	4	4	
Carl (31)					5*	4	4	4			5	4					5	5			5*	5	5	4	4	
SETTLING DOWN																										
Elliot (35)					5	5*	5	5*				4	5	5*				5						4		
BECOMING ONE'S OWN PERSON																										
Jack (30)											4								5		4		4			
Anne (38)				4						4	4	4		4	4	4		4	4	5	4	4		4	4	
Ted (35)							5	4	4	4	4	3	4	4					3	3	5	4	5	3		
MIDLIFE (FORTIES) TRANSITION																										
Jane (43)	4		4										5*		5*						4*					
RESTABILIZATION																										
John (41)							4	5								5			5*	5	4	1				
TRANSITION TO 50S																										
Florence (55)											4	2	4	1	4	1	4	1	5	2	5	3	4	1	5	

Key:
5 = very important - a key issue now
4 = becoming increasingly important
3 = somewhat important
2 = just beginning to be important
1 = not an issue now
*respondent added written comments

4.3 Sites/School Context

Project Sites

The first site, a junior high school in New Hampshire, has a total of 680 students in grades 7-8.

The New Hampshire site is located in a city which is a microcosm of America's largest cities. As one New Hampshire junior high school teacher put it, "We have all the ingredients of a large urban environment within a small community." The New Hampshire site has a stable middle class, an affluent population, and an economically disadvantaged population. Of the 680 students in the New Hampshire junior high school, about 15% qualify as economically disadvantaged under Title I. Approximately 7% of the New Hampshire junior high school school students are Black, Indian, Hispanic, or Asian.

In 1977, a Teacher Corps project began in the New Hampshire junior high school. The school had not previously participated in any kind of special federally-funded project. It had, however, undergone radical internal organizational change in the years prior to the entrance of the Teacher Corps project. In 1976 a new principal had reorganized the 850 student junior high from a traditional departmental organization to a schools-within-a-school format to more adequately meet the needs of preadolescent students. In 1982, midway through the study, the house coordinators responsible for each school-within-a-school were replaced by department chairs.

In September 1981, the principal resigned in order to accept an assistant superintendency in a larger New Hampshire city. The new principal was appointed in November 1981. He had been a junior high school teacher at the site and also a house coordinator of one of the schools-within-a-school. The average age of the current teachers at the New Hampshire junior high school was 40.

The Michigan site is located in a school district near a major metropolitan area. It serves 530 students in grades 6, 7, and 8. About 50% of the students come from upper middle class homes. Parents in the school area are active and verbal in their support of schools and their moral and attitudinal support has been very influential in the passage of school millages.

The Michigan site does not qualify for Title I aid. Its students score well on the Michigan Education Assessments Tests which are standardized competency tests administered in grades 4, 7, and 10. Approximately 50% of the students are Jewish, 10% Arabic/Chaldean, and 2% Black.

The Michigan site changed from a junior high school to a middle school in 1975-76 following extensive discussion and planning by administration and school staff. The average age of the staff was 40. In the past two years, as enrollments in the school district have declined, several elementary and senior high school teachers have been reassigned to the middle school on the basis of seniority. This reassignment of teachers has created changes in the school's schedule. Another change was the appointment of a new principal in 1980. The previous principal had been the only principal of this Michigan middle school since its beginning.

A profile of the context for each school was constructed from data generated through tape recordings of weekly action research teacher team meetings, analyses of the tapes, interviews with teachers and principals, and analyses of teacher journals collected during the first eight meetings.

For this report, context is defined as the social and interacting phenomena which surround and pervade the teachers' efforts to initiate changes through action research. Context includes not only the physical and/or organizational properties of the settings, but also the histories, influences, missions, and capabilities of the setting. It includes the nature of the leadership available, the conventions of teaching and learning held by the staff and students, and the perceptions and expectations of the immediate community (Griffin, 1982).

A full report on school context variables of the two teams can be found in Report IX, School Context Variables and Collaborative Action Research, in Appendix E as a supplemental report to this study. The following brief discussion of school context methodology is in the form of excerpts from that report. For a fuller understanding of the history, dynamics, and principals' roles in the schools under study, the reader should refer to this report.

A crucial aspect of this study has been to examine teachers' actions and interactions in their own school setting. A school can be viewed as a unique, complicated, socio-cultural system comprised of a history, norms, values, modes of communication and interaction, expectations, time perspective, role definitions, and programmatic and behavioral regularities. These elements make a school different, set it apart from other schools, and constitute a fibrous phenomenology which profoundly affects teacher and school change.

The interacting variables, unsynchronized intentionality, shifting circumstances, and unintended turbulence of school context require dynamic recursive inquiry and multiple data collection procedures. Action research is the critical piece in this study of the phenomenological and introduces criteria for directing inquiry to accommodate the ongoing shifts inherent in school context. The recursive nature of action research implies there are no stable, clearly delineated parameters in the study of school context but rather ongoing infinite revisions of inquiry. The study intentionally was begun by not assuming that all else remains constant while the teacher researchers and the school are under study.

At the outset of this project, teachers were administered the Organizational Environment Assessment Instrument (see Appendix B for sample), an inventory similar in its design to the Organizational Climate Description Questionnaire (OCDQ) developed by Halpin and Croft (1963). The Organizational Environment Assessment Inventory consists of the 26 items dealing with such matters as decision making, staff interaction and cooperation, administrative support, communication between teachers and administrators, and teacher and administrator influence. Results of the pre-test administration of the instrument revealed significant differences between the Michigan and New Hampshire action research teams' perception of their school's organizational environment. Numbers in parentheses in the following summary indicate the number of teachers out of 5 at each school responding with the comment written.

Members of the Michigan team perceived that the school administration had substantial confidence and trust in teachers (5), teachers had substantial but not complete confidence and trust in administrators (4), administration was generally (4) or fully supportive (1) of teachers, there usually were favorable and motivating attitudes among the staff toward the school and its goals (4), there was moderate (3) or extensive (1) interaction among the staff, teachers felt somewhat (2) or completely (2) free to discuss important things about their jobs and the school with school administrators, and teachers had moderate (4) to substantial (1) influence in shaping the goals and activities of their teams and departments.

In contrast to the Michigan team, members of the New Hampshire team perceived that the school administration had little confidence and trust in teachers (3), teachers had little confidence and trust in administration (5), administration was somewhat supportive (5), there sometimes were hostile and not motivating attitudes among the staff toward the school and its goals (4), there was little (2) to moderate (2) interaction among the teaching staff, and teachers had very little (3) to moderate (1) influence in shaping the goals and activities of their teams and department.

The Michigan research team perceived that teachers were usually consulted (3) or substantially involved (2) in developing special programs for students, and teachers were usually (3) or seldom (2) consulted about decisions related to their work. The New Hampshire research team perceived that teachers were consulted not at all (1), occasionally consulted

(1), usually consulted (2), and substantially involved (1) in developing special programs and teachers were seldom (3) or not at all consulted about decisions related to their work.

On the matter of communciation, the Michigan team perceived that communication between teachers and the administration was adequate (4) and that communciation through department leadership to the administration was accurate (4). There was a different perception among members of the New Hampshire team. They saw communciation between teachers and administration as not at all adequate (2), somewhat adequate (1), and adequate (1); and communciation between the department leadership and the administration as not at all accurate (1), somewhat accurate (2), and accurate (1).

Both research teams were in complete agreement about the extent to which administration could influence the goals and activities of teams and departments - substantially (3-3), moderately (1-1), and very little (1-1).

Teachers' responses to a second testing of the Organizational Environment Assessment Instrument in the beginning of Year 2 show some changes in their perception of the school climate. These changes may result from administrative changes experienced in both schools (in both New Hampshire and Michigan the principal's first year was 1981-1982, the first year of the project). Change in response may also reflect teacher participation in the project during Year 1.

In New Hampshire, teachers' responses show a general shift toward a perception that administration has more confidence in teachers, is more generally supportive of teachers, and knows and understands the problems teachers face (items 1, 3, and 20). These changes may reflect teacher optimism and belief in the teacher-orientation of their new principal, who had himself been a former teacher at the junior high. New Hampshire teachers also saw staff attitudes toward the school and school goals as more favorable and motivating than they had in the pretest, and they had a greater sense that teachers could influence the goals and activities of departments and teams (items 5, 22). Again, these shifts may have been influenced by teachers' perceptions of the principal as more open to teacher opinions. New Hampshire teachers' responses showed a shift in their perception of the level at which decisions are made (item 9). On the pre-test they indicated that they saw decision making as a top-down, administrative process. In the second testing, teachers tended to see decision-making as a process which could occur at or among a number of different levels. This shift corresponds to teachers' perceptions that participation in the action research process gave them a better understanding of the workings of the school.

Michigan teachers' responses also showed a shift in their perception of the level at which decisions are made, but they tended to change from seeing multi-level decision making in the pre-test toward unilateral, top-down decision making in the test Year 2. They also suggested that they saw communication between teachers and administrators as less adequate in the test Year 2 than they had in the pre-test (item 17). Responses on both of these items may have resulted from teacher perception of their new principal as more autocratic and less interested in teacher input than her predecessor. Michigan teachers also, however, showed some shift toward seeing school goals as determined by teacher input rather than as orders and toward feeling that the administration knew and understood teacher problems (items 10, 20). These perceptions seem to contradict those which suggest that the principal is less accepting of teacher input. The contradiction may have resulted from the mixed messages team members occasionally felt the principal projected (i.e., that she cared about teachers but would make the decisions herself) and from teacher participation in the action research project, which gave them an accepted and more powerful way of gaining access to and perhaps influencing the principal than was usual in the school.

The differences between the teams' perceptions of their organizational environments seem to be, in part, a function of their school histories and organizational structures. A full description of the history of the schools can be found in Report IX in Appendix E.

There is a reciprocal relationship between the history of a school and the role of the principal. The principal's perception of a school's history and structure is a key determinant in establishing the school's agenda and directions. On the other hand, the principal's degrees of freedom in exercising leadership and influence are bounded by the school's history and traditions.

Another fundamental aspect of the school context is the element of time commitments. Time conflicts and problems are continually frustrating to teachers, administrators, and to all those who work within the school time system. Teachers have fought to get control over the use of their time and have bargained to reduce the proportion of inert time to potentially productive time in the working day (Lortie, 1975).

The principal allocates the resource of time which matters so much to teachers and their working situations. Control over the allocation of time is one of the principal's sources of power, influence, and authority. It is not surprising then that both action research teams, through an independent process, identified the problem of scheduling for their research investigations (see Sec. 5.0). The documentation of the Michigan and New Hampshire action research teams point to the school schedule as one of the major stumbling blocks in creating opportunities for collaboration and a norm of innovation and experimentation.

4.4 In-depth Team Analysis

It was decided to present in depth the analyses of teachers on one of the two collaborative research teams. The New Hampshire team was chosen because the team represented more diverse stages of cognitive development than did the Michigan team. Comparisons with the Michigan teachers are presented in summary form in Secs. 8.1, 8.2.2. and 8.3.

Analysis of team meeting documentation, transcripts, interview data, and participant logs suggested that teachers' perceptions of issues in collaborative action research and the school context were related to developmental stage differences. From preliminary analysis of this data, five key issues emerged: 1) teachers' attitudes toward decision making/change, 2) teacher perception of group organization and process, 3) teacher perception of leadership and the university researcher, 4) teacher perception of authority of the school principal, and 5) teacher perception of project goals and outcomes. Teacher statements and actions in relation to each of these five issues were excerpted from the data. The excerpts were examined to see if pattern differences emerged between people who had scored at different stages on the cognitive developmental pre-tests.

In analyzing the teachers' perceptions of the group process issue, Selman's (1980) theory of interpersonal development was used as a way of validating or testing the idea that a person's cognitive developmental stage can be used as a predictor of their perceptions of school context and action research issues and their behavior on the team.

Interpersonal understanding related to conceptions of peer-group relations was assessed for each teacher on the collaborative research team using an interview and scoring manual by Robert Selman (1979). Selman (1980) provides a theoretical framework for a theory of interpersonal understanding (perspective taking) and the validity and reliability for his scoring procedures with samples aged 5 to young adult. He has collected data using hypothetical dilemmas and interviews; analyzed data cross-sectionally and longitudinally. and with additional analysis of judgment related to action. He also provides demographic norms. He calls for needed research on interpersonal functioning from a developmental perspective, in particular the interaction of the relative maturity of an individual's cognitive capability for interpersonal understanding and the individual's ability to function at his or her most competent level under a range of circumstances (Selman, 1980. p. 311).

In this study, all mentions of collaborative group organization and process during the first eight ARCS meetings were excerpted and scored for each individual according to Selman's Group Organization Aspects (see Table 8). Each aspect was scored for stage (0 to 4) according to in-depth guidelines in the scoring manual (see Appendix B). An outline summarization of the Conceptions of Peer Group Organization according to stage of interpersonal understanding is presented in Table 9. The first eight meetings were chosen because of the concern with gathering uncontaminated data on individuals and on the groups before teacher interaction may have influenced individuals' thinking and behaving in the group. Once teachers' comments were scored using these first eight meetings, their statements throughout the two years were examined for consistency or inconsistency with the original scoring.

An average issue score for Interpersonal Understanding was found by averaging the stage scores for all the individual responses. The average issue score, global stage score and range of scores was considered when discussing consistency. Operating level was judged by documentation notes and participant observation by the researcher and research assistant.

Table 8

ISSUES OF INTERPERSONAL UNDERSTANDING RELATED TO CONCEPTS OF PEER GROUP ORGANIZATIONS

1. _Formation_: why (motives) and how (mechanisms) groups are formed; the ideal member

2. _Cohesion_: loyalty: group unity

3. _Conformity_: range and rationale

4. _Rules-Norms_: types of rules and reasons for them

5. _Decision Making_: setting goals, resolving problems, working together

6. _Leadership_: qualities, and function to the group

7. _Termination_: why groups break up or members are excluded

Selman, Robert L. _The growth of interpersonal understanding_. New York: Academic Press, 1980.

Selman, Robert L. _Assessing interpersonal understanding: An interview and scoring manual in five parts constructed by the Harvard-Judge Baker social reasoning project_, 1979.

Table 9

CONCEPTIONS OF PEER GROUP ORGANIZATION

Stage 0: The group as *physicalistic organization*

Stage 1: The group as *unilateral relations*
- Do what leader says
- To benefit one or another member
- No awareness of converging mentalistic "agreements" between members

Stage 2: The group as *bilateral partnerships*
- Concern for reciprocal or bilateral feelings of affection extended in an associative chain from one dyad to another (Sullivan's interlocking two groups)
- Person believes each member ought to form a dyadic friendship with every other member of the group ("everyone has to like each other")
- The person believes that members work together through a context. Specific exchange of favors ("partnerships," "teamwork") based on equal treatment and cooperation which simultaneously benefits all parties involved
- Recognition of the *convergence* of thoughts and interests ("agreements") among group members around specific group activities ("they should like the same things")
- However, the person is still unable to organize the group as a shared community, common to all members regardless of their specific relations to one another.

Stage 3: The group as a *homogeneous community*
- Increased concern with peer group relations
- Shift from the group as a series of associative relationships to each member's relation to a common whole
- Important concepts are: (1) recognizing the group as a *social* whole "work together as a unit" (2) held together as a *shared community* of common interests and beliefs in which there is a *consensus* of conventions and generalized expectations. "We decide on one thing everyone wants to do"
- Limitations are due to the equating of commuunity with homogeneity of values

Table 9 (continued)

- Inability to distinguish between role differentiation (e.g., leadership) and a lack of communal attitude
- A sense of obligation to the group is felt but generally in terms of pressures toward uniformity "you go along so you are not the odd ball"

Stage 4: The group as a pluralistic organization
- Three important organizational concepts emerge in the person's understanding of group dynamics
  - (1) A sociological perspective by which collective organizations are treated as multifaceted systems interdependent with individual differences "a group is a continuing process and it functions for members to coordinate their activities"
  - (2) A belief in a pluralistic community in which individual diversity is not suppressed but united behind common goals: "individual personalities of people different from each other will contribute to the group and make it more of an entity than it was before"
  - (3) A recognition of the need for contractual agreements as formal regulations for organizing this plurality: "rules serve as . . . some structure to the group"
- The person becomes aware of political decision making such as "compromise" which serves to integrate the diversity of interests in a pluralistic organization.

Selman, Robert L. *The growth of interpersonal understanding*. New York: Academic Press, 1980.

Selman, Robert L. *Assessing interpersonal understanding: An interview and scoring manual in five parts constructed by the Harvard-Judge Baker social reasoning project*, 1979.

5.0 TEACHER RESEARCH QUESTIONS

An integral element of this study and the collaborative action research process in general was to involve teachers directly in the research process. By identifying and discussing problems in education, and in their own school in particular, the teachers were given the opportunity not only to examine change in the school setting but also to develop ways in which they might bring about change. The principal investigators, in their role as researchers on the team, were also given the unique opportunity to observe teachers in an ongoing research process, to see how they worked as individuals and as a group in recognizing and effecting change, and, of primary importance to the purpose of the overall study, to observe how the teachers' stages of development impacted on the group process and change in schools.

After teachers for the two research teams were selected in September 1981, the teams began meeting in October. With both the teachers and university researchers acting as working members of the teams, teachers were freed from the confines and external expectations of the traditional supervising aspect of staff development. In the action research setting, they were encouraged to go to the source of the problems affecting change, both in the individual and the school context. The teachers participated in developing research designs, in collecting data to respond to research questions, and in developing and presenting their findings and conclusions.

Over a period of two years, the teams identified and developed research questions that were seen to address their concerns most effectively. Both teams found that questions revolving around scheduling decisions affected all dimensions of their schools. They discovered that decisions about the allocation of time affected the curriculum, student learning, student and teacher relationships, and opportunities for innovation; that the schedule reflected a school's priorities and values about the educational process; that scheduling could provide significant flexibility or severely limit flexibility; and that scheduling could promote collegiality or fragmentation.

During the first school calendar year, Year 1, the team investigated these concerns, identified their research questions, and designed research strategies and frameworks. This process is described in subsection 5.1 and fully reported in Report V, _ARCS Team Research Proposals on Scheduling_, found in Appendix D.

The second year, Year 2, was devoted to collecting and analyzing data, developing findings and conclusions, and compiling a final report, _Action Research on Change in_

Schools: The Relationship Between Teacher Morale/Job Satisfaction and Organizational Changes in a Junior High School, from the New Hampshire team (see Appendix D). The Michigan team approached the second year similarly, culminating in a report and a list of recommendations to the administration and faculty of their school, *Action Research on Change in Schools: A Study of Scheduling in a Middle School* (Appendix D).

Teachers from both collaborative action research teams began the project with little background in formal research methodology or had not applied the research skills they had to existing school-based concerns. Through the collaborative action research project, teachers learned to apply research techniques to problems which they identified in their existing school contexts. Although the roles of teacher and researcher may have conflicted at times, the experience provided new insights for those involved in the collaborative action research project. Section 5.3 below reports how the teachers felt they had developed research and/or teaching skills as a result of their participation.

5.1 Year 1

In the first year, from September to June 1981, each team developed a proposal for research. These proposals can be found in Report V in Appendix D.

Proposal on Junior High School Scheduling/New Hampshire

In their proposal, teachers from the New Hampshire ARCS site described an evaluation study of scheduling in their own and several other junior high schools. Within this framework, the team decided to undertake a descriptive case study of its own school context, the school philosophy, and the match between the philosophy (goals, objectives, and junior high priorities) and the scheduling practices related to teacher teaming and student ability grouping. In this process, the team would present its analysis of the strengths and weaknesses of current practices in light of teacher morale, job satisfaction, and student learning. Site visits to other schools and a review of relevant literature would provide data on alternative scheduling procedures. The study would culminate in a recommendation to the school principal of schedule modifications which were: 1) consistent with the team's operational definition of a junior high school, and 2) substantiated by the team's surveys, literature review, and field observations.

Proposal on Middle School Scheduling/Michigan

This proposal described the research process used by one ARCS team to modify the existing middle school schedule in the Michigan site. The team first used teacher and administrator surveys to assess opinions about the schedule, team teaching, middle school philosophy, grouping, and time management and planning. The team also surveyed a random sample of 90 middle school students for their opinions in areas related to scheduling; including learning needs and styles, the schedule itself, time allocation, and subject matter organization. The Michigan team reviewed literature on middle school scheduling and philosophy and examined the relationship between the middle school's current scheduling practice, its philosophy, and the school district goals and curriculum. It was decided to conduct in-depth interviews with teachers and a random sample of parents to provide further data on perceptions and opinions about the middle school and its schedule. Based on the data collected, this Michigan team planned to implement and evaluate alternatives for the current schedule.

5.2 Year 2

New Hampshire

Preliminary investigation into the issue of scheduling coupled with organizational changes made by a new principal led the New Hampshire team to refocus on a narrower issue related to scheduling and to the concerns raised in Year 1. The team chose to investigate the relationship between school staff job satisfaction/morale and a number of organizational changes/practices occurring at the junior high school. Research questions were developed to study new organizational changes at the school affecting the staff's perceptions of:

1. morale/job satisfaction
2. teaming
3. communication with colleagues
4. communication with administration
5. teaching assignment
6. time management and planning

An additional research question asked whether goal clarity and involvement in policy decision making was related to staff morale/job satisfaction.

Morale/job satisfaction was measured using the Maslach Burnout Inventory (Maslach & Jackson, 1980), commonly referred to in surveys as the Human Services Survey (HSS), to determine staff perceptions of the teaching/learning environment. The team created an instrument labelled the School Survey (SS) to probe teachers' perceptions of scheduling issues. The SS is a collection of 21 statements requiring a Likert response ranging in 5 points from definitely agree to definitely disagree. Findings and conclusions of the teams study are reported in the team's final report (Appendix D).

Conclusions of the study included the fact that the staff at the school felt teaming is beneficial to teachers, that they do not have time to communicate with other staff members to share ideas and materials, and that they do not have enough time to manage and plan assignments. In addition, staff felt they had little involvement in decision making.

Michigan

The Michigan teachers decided on a different course of action for Year 2. The team constructed and administered a parent survey and then analyzed and compiled a report on the results, interviewed 16 teachers, and analyzed and compiled a report on the results of three essay questions taken from a pupil survey.

The team compiled its final report (see Appendix D) and made the recommendations to the administration and faculty of the school that included active participation of teachers in scheduling, the eventual development of team teaching, matching learning styles with teaching styles, building shared time for preparing materials into scheduling, and investigating flexible scheduling.

5.3 Research Skills

Previous studies have suggested that successful collaborative action research requires teacher participants who are confident, willing to share and experiment with ideas and concerns, and have some background in research (Hall & Hord, 1977; McLaughlin & Marsh, 1978; Rainey, 1973). This study shows that while these teacher characteristics may influence the roles individuals assume on an action research team, teachers can also acquire some of these attributes and skills through their participation. Only one teacher on this team felt skilled in research when the project began. By the end of the two years, the other teachers had become familiar with research methodology and had, in some cases, developed a sense of expertise in their area of research. Through participation in the project, teachers also experienced increased confidence in themselves as teachers and professionals.

All of the teachers involved in the project indicated that they had gained skill in research and/or teaching as a result of their participation. Their responses on the Research-Teaching-Development Skills Questionnaire administered in May 1983, illustrated a general shift upward in skill level in a number of areas (see Research-Teaching-Development Skills Questionnaire Pre-Post Teacher Responses, Appendix E). The degree of skill improvement and the particular skills improved appear to depend in part on each individual's role in the project.

In New Hampshire, both Elliot and Brooks entered the project in 1981 with familiarity or some skill in the majority of areas listed on the questionnaire. Both were very involved in the group's research project; Brooks in the initial choice of research question and design and in data collection, and Elliot in data analysis and presentation of results. Their commitment and task assumption led both to feelings of project ownership and the sense of having done a good job.

In May 1983, both Brooks and Elliot indicated that they felt highly skilled in the majority of Research-Teaching-Development Questionnaire items. Through their high levels of participation in the project, they seemed to have gained skill in many areas. It is interesting to note that their perceptions of being highly skilled extended in May 1983 to skills not addressed in the project, specifically teaching related skills such as "knowledge of a curriculum planning model." Thus, overall feelings of confidence about research and teaching predominated for Elliot and Brooks as they completed the questionnaire in May 1983.

Ted entered the project with the sense of having little or no skill in the areas listed on the questionnaire. Ted's minimal involvement in the project's research tasks was reflected in his perception of having gained little skill as a result of project participation. His responses on the May 1983 Research-Teaching-Development Questionnaire indicated that although he gained some familiarity with research, he experienced little research skill development. Unlike Elliot and Brooks, Ted showed no change on skills not directly used in the project.

John, like Ted, began the project believing he had none of the skills listed. By the end of the two years, his questionnaire responses indicated that he felt somewhat skilled in a number of these same research skills. Because the team's research was less important to him than the process in which they engaged, he did not indicate an increase in as many research skills as Brooks and Elliot, and he described himself as "somewhat skilled" rather than "highly skilled," as they did on comparable items. Like Brooks and Elliot, however, some of his greater sense of confidence and skill carried over into the teaching area, and he indicated higher skill levels in a number of teaching skills unrelated to the team's research project or process.

Teachers on the Michigan team exhibited similar patterns. Like Brooks and Elliot, Jim entered the project with some feelings of competence in most of the skill areas on the questionnaire. He left the project feeling highly skilled in most areas, including those not directly related to the project. His increased sense of skill may have resulted not only from participation in the project but also from having assumed and carried out new job responsibilities during the second year of the project.

Lori's questionnaire responses in Year 1 were more scattered than those of other teachers, showing her feelings of having no skill in some areas and of being highly skilled in others. In May 1983, she showed some increase in research skills (from no skill to somewhat skilled) but most of her increased skill areas (from somewhat to highly skilled) occurred in teaching tasks. Like Jim, her response in May 1983 may reflect her experience as part-time staff developer, a new position she assumed as the project began.

Florence, too, indicated greater skill in both research and teaching after having participated in the project. When she first took the questionnaire, she described herself as having no skill in most research areas listed. In May 1983, her responses showed a shift to somewhat or highly skilled in research (highly skilled in those specific areas in which she was most directly involved, such as planning data collection procedures) and to highly skilled in teaching items not directly related to the project. For Florence, as for others, participation seemed to have led to greater feelings of competence that carry over from the project into the classroom.

Anne, like John, indicated that she had no skill in most research topics and some skill in most teaching items. Her responses in May 1983 showed a general shift toward being "somewhat skilled" in research, particularly in those skills the team directly addressed during the two years of the project such as identifying a researchable problem and planning appropriate data collection procedures. She seemed to be less affected by an overall sense of increased competence than her colleagues; Anne still saw herself as having no skill in research skills not directly used in the team's project and as having some skill in unrelated teaching skills.

In addition to improved research skills,the teams engaged in numerous presentations describing the project and its process. These presentations are chronologically listed in Table 10 along with the audience for each presentation.

Teacher Presentations of Projects and Process

	New Hampshire			Michigan	
	Presentation	Audience	Date	Presentation	Audience
	Syracuse workshop Two ARCS teams met to present research proposals and share ideas	Michigan team	May 1982	Syracuse workshop Two ARCS teams met to present research proposals and share ideas	New Hampshire team
mber	Presentation to National Staff Development Conference. Report on ARCS project and process of collaborative action research	Staff developers and teachers from United States and Canada, principal and superintendent from Michigan school site	November 1982	Presentation to National Staff Development Conference. Report on ARCS project and process of collaborative action research	Staff developers and teachers from United States and Canada, principal and superintendent from Michigan school site
			January 1983	Presentation to Institute for Research on Teaching, Michigan State University Report on ARCS project and process of collaborative action research	25 professors, researchers and deans from Michigan colleges and universities
ary	Presentation to District Staff Development Committee. Report on ARCS project and process of collaborative action research	One teacher representative from each elementary, junior, and senior high school in district; assistant superintendent; junior high school principal			
			March 1983	Presentation to school board. Report on results and implications of ARCS study	School board members
			March 1983	Presentation to Western Michigan State University Report on ARCS project and methodology of collaborative action research	Education faculty

Table 10 (continued)

Teacher Presentations of Projects and Process

	New Hampshire			Michigan	
Date	Presentation	Audience	Date	Presentation	Audience
April 1983	AERA symposium Report on ARCS project and process of collaborative action research	Researchers, teacher educators and representatives of federal agencies from United States and Canada	April 1983	AERA symposium Report on ARCS project and process of collaborative action research	Researchers, teacher educators and representatives of federal agencies from United States and Canada
April 1983	Presentation to University of New Hampshire graduate course on Stress in Educational Organizations. Report on ARCS project and process of collaborative action research	Inservice teachers and part-time University of New Hampshire Masters and CAGS students in Education			
May 1983	Presentation to University of New Hampshire faculty colloquium. Report on ARCS project and process of collaborative action research	Education Department faculty			
			May 1983	Presentation to Oakland County Chapter Phi Delta Kappan. Report on ARCS project and process of collaborative action research	Teachers, administrators and University faculty
June 1983	Leslie College Middle School Conference Report on ARCS project and process of collaborative action research	Middle school teachers and administrators			

6.0 FINDINGS: COLLABORATIVE GROUP PROCESS

Data collected about the collaborative action research teams revealed that the teams' research process consisted of a series of steps used to carry out their research task. Although the team eventually worked through each step identified by Tikunoff, Ward and Griffin (1979) as those characterizing the process of action research, they experienced a cyclical rather than sequential process. They frequently worked simultaneously within several research steps and circled back to readdress isses in the research process which required further work (for example, see Table 11, Chronology of the New Hampshire Research Project).

Through this process, the teams negotiated their relationship to the school context. For instance, although New Hampshire team members began the project with expectations of helping to solve school problems, they gradually disassociated themselves and their project from the school as a way of maintaining control over their work. Their separation from the school also allowed them to feel that their project had been successful even though it seemed to have had little immediate impact on the school. In both the New Hampshire and Michigan teams, as teachers worked through the steps of their project and determined their position in relation to the school context, they modified their definitions of action research and their perceptions of themselves as researchers in ways which reflected and gave value to their experience.

Both teams also experienced a group process which influenced and was influenced by its research process. In-depth analysis of the New Hampshire team's process suggests that the team worked through five phases of development, each characterized by specific research tasks and interpersonal issues which required attention (see Table 12). In each phase, teachers and the university resarcher on the team assumed different roles based on the needs of the research project and the demands of the group's interactive process. Their patterns of support, conflict, and decision making also reflected the dual demands of research task and interpersonal interaction. The New Hampshire team's group process is described in detail in Report I, The Collaborative Process of Action Research: A Case Study, Appendix C. The Michigan team's teacher roles, researcher role and pattern of conflict are summarized in Report II, The Michigan Team: A Summary of Research and Group Process, Appendix C.

In this project, teachers and university researchers on the teams participated in all phases of the research, from identifying a researchable problem to writing the final report. Team members felt that parity was achieved: teachers and university researchers contributed their particular skills and insights to the project. As Wallet, et al. (1981) suggest, parity does not mean equal responsibility at all

Table 11

CHRONOLOGY OF THE RESEARCH PROJECT (NEW HAMPSHIRE COLLABORATIVE RESEARCH TEAM): A Cyclical Rather Than Linear Process

Year 1	Research Issues and Tasks
October - December, 1981	Introduction to action research Problem identification
January - March, 1982	Research question Identification of specific questions within the issue of scheduling Data collection procedures: Staff Opinion Survey Letter to identify schools to visit School visit interview drafted School history ERIC search on scheduling Data analysis: Staff Opinion Survey Research design: Where do we go next?
March - May, 1982	Research question: The effect of school change on teacher morale Research design: Evaluation research Data collection procedures: Work on school visit interviews Possible use of student achievement scores Maslach Burnout Inventory and School Survey administered Interview with principal Research proposal written for National Institute of Education
Year 2	
September - December, 1982	Clarification of research question and design Data collection procedures: Preparation and administration of teacher interviews Discussion of school visits ERIC search on teacher morale Data analysis: Discussion of how to analyze MBI and School Survey

Table 11 (continued)

Year 2 (continued)	Research Issues and Tasks
January - March, 1983	Data collection: Second administration of MBI and School Survey Data analysis: Analysis of MBI and School Survey Presentation of results: Drafting of final report
April - June, 1983	Presentation of results: Completion of final report Presentations at AERA and University of New Hampshire

Table 12

PHASES OF THE COLLABORATIVE PROCESS (NEW HAMPSHIRE COLLABORATIVE RESEARCH TEAM): Integration of Research and Group Process

Phase	Issues		
	Research Process	Use of team time	Group Process
1	Problem identification	Discussing school context	. Establishing trust . Sharing opinions and ideas; building a common cause . Setting boundaries . Establishing norms
2	Data collection (School Opinion Survey) Unclear goals; difficulty deciding on research project questions	Discussing school context and concrete data collection tools	. Feelings of being "on hold" . Challenging group leadership . Unfocused discussions
3	Research design and research question	Discussing research project	. Feelings of frustration and time pressure . Concern with group consensus for cohesion . Group rather than individual writing for reasons of "fairness"
4	Data collection (MBI, School Survey, interviews) How to analyze data	Discussing research project	. Feeling that interpersonal issues are resolved from Year 1 . Questions of individual commitment to group project . Resetting boundaries
5	Data analysis and presentation of results Dissemination of results	Working on data analysis and final report	. Feelings of working hard and accomplishing much . Emphasis on group rather than individual work . Positive group feelings . Attempts to set realistic boundaries with school

points in the project, but implies that team members assume responsibility when they have the appropriate skills and knowledge to do so. The shifts in roles and leadership experienced by the members of this action research team therefore illustrated the concept of parity.

Communication, openness, and trust between teachers and university researchers never arose as problems in the New Hampshire team, although some teachers did have to work through concerns of confidentiality and trust among themselves. They implicitly negotiated these issues through conversations and shared tasks during team meetings, never raising them as concerns that the entire team should address. Teachers experienced some initial frustration and confusion with the non-directive leadership role assumed by the university researcher. In Year 2, the New Hampshire researcher assumed a more directive role in modeling and carrying out research tasks. The only open challenge to this role came from Jack, who may have been trying to test the university researcher's non-directive role in a conflict in phase two over when to meet. Aside from this confrontation and occasional comments about the need for more direction voiced during interviews, teachers again worked through this issue without directly discussing their concern. By the end of the project, teachers felt that the university researcher had assumed the best possible role, one which led to teachers development as researchers and to their feelings of owning and valuing the research project and experience. It was the frequent and regular meetings which allowed the team to create a process through which group members could learn about and accept one another's roles and positions and create the positive interaction between teachers and researchers.

The Michigan university researcher assumed a fairly constant facilitative role throughout the two years of the project. Michigan team members described him as having gotten the team started by asking questions, clarifying and summarizing their ideas during team meetings, and keeping the team on track. Jim noted that the Michigan researcher "gave expertise, not direction," and Anne pointed out (as did several New Hampshire team members) that the university researcher's facilitative style allowed teachers to control the project. She said that he helped "get things moving and then . . . (stepped) back and (watched) a little bit more and let us take over and try and work things through. Which is good - it gave us more ownership, you know, more of a feeling that we were doing." In their final interviews with the university researcher and in conversations with members of the New Hampshire team, at least two Michigan teachers indicated that they would have liked more guidance, assurance, and direction in the form of timelines and deadlines from the university researcher. Again, this paralleled needs expressed by some of the New Hampshire teachers and suggests that although teachers recognize the value of controlling and thus "owning" their project, some also want a certain amount of direction and not just facilitation from the university researcher.

The participation of both teachers and researchers on a collaborative action research team is expected to lead to a connection between theory and practice. Through this connection, theory can be enriched and practice improved. The New Hampshire collaborative action research team carried out a project which, although it may have contributed to theoretical understanding of the relation between school organization and teacher morale, the teachers in the team felt had little immediate impact on school practice.

At the close of the project, the Michigan team planned meetings for the upcoming fall to the school board, superintendent and staff to attempt to maximize implementation of their study's recommendations. Although they, too, were unsure and somewhat pessimistic about the impact of their project, two of the Michigan teachers, Florence and Anne, were charged with the responsibility of describing the collaborative research process to the staff in order that some may participate in an action research project of their own choosing.

When teachers describe their work as having little immediate impact on the school, they may not have considered, however, that their reports and this report, in general, may indeed have an affect on change in a much more global scope than just their own school setting. In addition, the changes that they expected that they believe had not occurred may yet come as the impacts of reports of this nature filter back through school systems. Most of the significant changes they hope for are more likely to take place slowly and evolve over a period of time in which there will be an ongoing give-and-take process. What the teachers do recognize is that the collaborative research process they have undertaken could be an avenue of change in itself if adapted by the school or system. This evolutionary process, nevertheless, is out of their control or sphere of influence and will depend, in part, on a principal's attitude toward action research.

By the end of the project, teachers expressed a greater willingness to communicate their concerns and experiment with solutions. They attributed this openness to their better understanding of school issues and their growing belief in their own ability to address the problems which arose. The teachers involved in this project were diverse in their expectations, skills, understanding, and needs brought to the team. Each contributed to the research project and group process in ways consistent with their individual backgrounds. The "required" characteristics for teacher participants in collaborative action research, therefore, appear to be less important than the willingness to become involved in the research process. Involvement itself can lead to attributes and skills which allow collaborative action research to succeed.

In describing characteristics or expectations of collaborative action research, previous studies tend to omit discussion of patterns in the research or group processes. The research process consists of the steps taken by the team in carrying out its research tasks, and the group process is the patterns of interaction developed as the team works through its research process. These patterns tend to be site and group specific. Their inclusion would make any description of collaborative action research more complex and, perhaps, less immediately generalizable. Both research and group processes are affected by external factors such as school context and project organization, and internal factors such as the experience, commitment, and skill of the participants. Research process and group process affect and are affected by the team's choice of research topic. Taken together, the research project, research process, and group process create an experience through which team members may contribute to educational theory, improved school practice, and their own professional development. Their project outcomes depend on the interactions among the research task, process, and group dynamics (for a full analysis of one team's interaction of these three parts, see Appendix C).

7.0 FINDINGS: SCHOOL CONTEXT, NEW CONTEXTS, AND SCHOOL CHANGE

As we noted in the introduction of this report the purpose of the ARCS study was to investigate the relationship between developmental stages, action research in schools, and individual teacher change. The study was designed to address three questions:

1. To what extent do teachers' stages of development (ego, moral, and conceptual) influence and affect the changes they undertake? The context of the changes? The content of the changes?
2. How do the contextual variables of the school, i.e., the definition, rewards, expectations, norms, social climate, structure, etc. affect individual teacher change?
3. What is the role and impact of action research in the promotion of individual change? What is the impact of action research on teachers' psychological development? To what extent does action research provide support and challenge for individual teacher change?

7.1 Beginning the Project: Prospects for Individual and Individual and School Change

Focusing on individual change brings attention to action research as a staff development process for promoting professional and psychological growth and renewal. But the ARCS project involved more than individual teacher change. Inherent in the title of the project - Action Research for Change in Schools - was the expectation of a schoolwide change effort. Reinforcing the idea of schoolwide change was the teachers' decision to focus their efforts on conducting group research projects rather than executing individual research projects in each of their classrooms. So while the purpose of the project for the university researchers was to examine individual change within the framework of collaborative action research, the pervasive concern of the teachers throughout the project was school change.

School change became the content of the action research process and subsequently an important arena of inquiry for the project as the teachers began to examine the implications and recommendations of their findings. In the final stage of the project the process of inquiry gave way to the urgency of implementing and acting on findings. The teachers' attention turned to the strategies and possibilities of change embedded in the recommendations of their studies.

The questions of change which the teachers struggled with in the final phase of the project were the elements which originally attracted them to the ARCS. This is to be expected when one considers that action research is research for action - a participatory form of inquiry which leads to effective action - the systematic collection of data to bring about change - applied research which actively involves the researcher in the cause for which the research is conducted (Bogdan & Biklen, 1982:215).

The possibilities of change motivated the Michigan and New Hampshire teachers to participate in the ARCS project. In their initial interviews and responses on the Educational Experiences Inventory change was the pervasive theme illuminating individual motivation and involvement in ARCS. For example, members of the Michigan team referred to specific issues of change in citing reasons for participation in the project:

> JIM
>
> I have been involved in the transition of a junior high to a middle school change because of personnel, community, etc. I would like to look more closely at those items that cause change.

* * *

> LORI
>
> I'm always interested in hearing about innovations in education which will make me a more effective teacher.
>
> The Oakland University letter, which explained ARCS, left questions in my mind which I wanted clarified. The word, CHANGE, interested me. What aspect of change was ARCS concerned with?
>
> I suspected that it was the change from middle school to junior high school - whoops, vice versa.
>
> With declining enrollment as crucial an issue as it is in the school district, CHANGE is a key word: change in staff, change in teacher assignments, change in services, change in curriculum.
>
> . . . Likewise, I've been teaching for twelve years now, and I'm determined not to fall into the rut of an experienced teacher whose most important teaching tool is the file cabinet.

* * *

> JANE
>
> I think this program can make a difference - too many development programs are filed and forgotten. Also - I want to change. In the past, I have always liked to try new things, but in the last 3 or 4 years, I think I've slacked off on innovation and become a bit complacent.
>
> I want to do something new, I've gotten some systems down pat and working well. I'd like to extend 'down pat and working well' to other areas.

* * *

ANNE

I see the Action Research on Change in Schools Project as an excellent means of incorporating new or 'changing' methods into my classroom. The community and school are in constant change. I seem to be at a stage in life and teaching when change is necessary and needs to be made.

* * *

FLORENCE

I would like to explore some new approaches to presentation of language to students at this level. I think I am a good teacher. But schools change and students change. I know my methods have changed and I hope the change was an improvement. However, I know there are probably ways that I can be more effective, and I'd like to explore those possibilities. It is important to do this. I want to find out if there are some ways to institute changes in my methods, and still be as effective a teacher as I think I am now.

The Michigan teachers saw ARCS as an opportunity to change their approaches in the classroom, to renew themselves professionally and personally, to be innovative, and to avoid falling into a rut.

For the New Hampshire teachers, coping with effects of change, professional advancement and growth, bringing change to the classroom, studying change, and participating in a "serious" change effort were needs which could be addressed through ARCS.

BROOKS

I enjoyed my involvement with the Teacher Corps at the junior high three years ago. Since that time the school has gone through one change right after another. I, personally, am trying to discover the effects that these changes have on me. The stress I feel at times has led me to take up running. For the past two years I have talked about finding another job. Why? I just don't seem to be able to cope with all the changes.

* * *

ELLIOT

I am interested in preparation to advance to roles of more responsibility; ARCS will ideally motivate thought and greater precision in my conceptualization of issues relevant in an advanced position. My personal life right now is substantially involved in planning and preparing for professional growth/change.

* * *

TED

> I hope all of us are going to work together and form a team. I hope we have a close working relationship which will carry over into the school and the classroom. I hope when we focus on something it will be something that all of us can bring back into our classroom. At least meet some of the needs of the pupils here and not be something that abstract or just something that's going to be filed away.

* * *

JOHN

> I enjoy teaching junior high students. I have taught in public and private, small and large schools. Many changes good and bad, many ideas of how to improve. In the past my personal life has been hectic so extra time could not be used. Now I have the time to study change.

* * *

JACK

> I hope that I'm not expecting too much. I'm interested in participating in this. I'm more of a practical person. I'm more willing to discuss theory, that doesn't bother me, but how does it apply? Somebody can say to me, OK, now, this can be used, it can be applied, its fine. If its just a complete theory, it isn't going to have practical applications then I'm not even interested in participating. That's why in some cases I have stayed away from things. I have taken courses, conferences strictly to satisfy my staff development because I needed the staff development and it was fine. I said now, maybe its time to participate in something serious.

As they entered the project, the teachers' interests were expressed around issues of personal and professional growth, change in instructional approaches, and change in their classrooms. An oblique indication of their interest in schoolwide changes was reflected in responses on the Problem Identification Questionnaire administered during the first team meeting in October 1981. Teachers were asked to identify five problems facing teachers and schools today. Among the 49 responses from the original 10 participants, only six dealt with specific classrooms or curriculum issues. The major topics of concern to the teachers included educational financing, school morale, school administration, scheduling, declining enrollments, student achievement, student discipline, and lack of faith in schools by society (see Table 13).

While these responses suggested that teachers were interested in macro-changes, the initial interviews conducted at the beginning of the project revealed that teachers were more optimistic about the benefits of the project for themselves than for their schools. Teachers from both sites saw

Table 13

New Hampshire ARCS Participants

Problem Identification Questionnaire

Teacher	Problem Facing Education Today	Agreement Among Peers			
		Less than 25%	25-50%	50-75%	Over 75%
Brooks	(1) Scheduling - selecting specific student for a particular time slot and number of minutes for instruction			x	
	(2) Discipline - handling classroom problems				x
	(3) Coordinating curriculum w/other faculty		x		
	(4) Dealing w/administrative decisions - little faculty input			x	
	(5) Working w/stress of constant change				x
Ted	(1) Student control	No information available			
	(2) Meeting individual needs of students				
	(3) Lack of faith in schools by society				
	(4) Financial problems facing schools and teachers				
	(5) Decline in learning taking place - (lower achievements)				
	(6) Lack of resource people				
Elliot	(1) Society at large is in period of upheaval, change. The new order, and school's role, is uncertain				x
	(2) Efforts to make teachers accountable tend to lessen importance of student responsibility			x	
	(3) Society provides no alternative to school for the adolescent save prison/detention centers		x		
	(4) Increasing pressures to schools to assume duties traditionally reserved for home/parents				x
	(5) Large number of teaching positions are being eliminated because of declining enrollments			x	
Jack	(1) How to improve morale of staff			x	
	(2) Develop better trusting relationship between staff and administration			x	
	(3) Make more money and people available to teach disadvantaged		x		
	(4) Figure out a way to have a stable schedule without changing it every year				x
	(5) Improve the working conditions and salaries			x	

(continued)

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Table 13 (continued)

Teacher	Problem Facing Education Today	Agreement Among Peers			
		Less than 25%	25-50%	50-75%	Over 75%
John	(1) Working w/office on problem students in classroom		x		
	(2) Working as a subject team teacher	x			
	(3) Handling I.E.P students in classroom				x
	(4) Working in a total team teaching situation		x		
	(5) Coordinating discipline among all teachers in a team	x			

(continued)

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Table 13 (continued)

Michigan ARCS Participants
Problem Identification Questionnaire

Teacher	Problem Facing Education Today	Agreement Among Peers			
		Less than 25%	25-50%	50-75%	Over 75%
Jim	(1) Funding of education/decisions?				X
	(2) Re-assignments of teachers			X	
	(3) Curriculum changes/start to implement			X	
	(4) Demands on teachers' time			X	
Anne	(1) Changing enrollment (dwindling enrollment)			X	
	(2) Large numbers in the classroom				X
	(3) Teachers teaching "out" of their field (less qualified)				X
	(4) Less money for education (materials, teachers, etc.)			X	
	(5) "Older" teaching staffs (less new teachers, new ideas)		X		
Florence	(1) Money				X
	(2) Staffing			X	
	(3) Curriculum			X	
	(4) Discipline				X
	(5) Scheduling			X	
[illegible]	(1) Lack of respect by the general public for the teaching profession				X
	(2) Lack of parent accountability				X
	(3) Increasing roles that teachers are required to fill in the classroom			X	
	(4) General lack of professionalism among teachers		X		
	(5) Decreasing financial support in line with declining enrollments				X
Jane	(1) Back to basics movement and classroom conflicts	No information available			
	(2) Much of school is boring for kids - learning should be exciting				
	(3) Kids don't apply their best brainwork to school work				
	(4) Assimilation of foreign born children is difficult for them, peers, and teachers				

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the primary benefits of the project in terms of opportunities for personal growth - "help me put things together," "better person to make decisions," "a chance to improve." Teachers also mentioned as benefits - "help me to become a better educator," "meet some of the needs of the pupils," "will carry over to the classroom," and "help students achieve better." Teachers were far less optimistic about the benefits of the project for their schools. Comments from teachers in both sites included, "unpredictable for school," "for large part of school no benefits." Only one teacher from New Hampshire and one from Michigan believed the project would have an effect on the rest of the school.

7.2 Temporary Systems and the Action Research Process

Formed together out of a desire for personal, professional and/or classroom change, the ARCS teams evolved into temporary systems (Miles, 1964; Goodman & Goodman, 1976; Morley & Silver, 1977; and Benne, Bradford, Gibb, & Lippitt, 1975). A temporary system consists of a group of individuals who engage in a joint task for a limited period of time (Miles, 1964). People come together, interact, create something, and then disband. Examples include conferences, workshops, institutes, retreats, study groups, and projects. "Such systems are brought into being to develop an idea, a plan, a product, a service, or to make something happen. When the task is completed, or the time set has expired the system is dissolved. Permanent systems, in contrast, exist to carry out relatively repetitive operations, or to provide services for which there is a continuing need" (Gant, South, & Hansen, 1977:4).

Both of the ARCS research teams functioned as temporary systems in the permanent systems of their middle schools. Within temporary systems, individuals and groups may behave differently than in the permanent system because there is no necessary commitment to permanent organizational change. New structures and norms can be substituted for existing ones and can be tried out to determine their value. Power and status differentials may be minimized to facilitate new patterns of communication and to locate areas of needed change. For instance, where teachers can freely interact as peers, new patterns of problem solving and new approaches to decision making can be tried.

The action research teams (temporary systems) operated very differently from the ways in which the schools (permanent systems) operated. Corbett (1982:12), in describing innovation efforts in 14 schools, could have been speaking about the ARCS teams:

> Instead of relying on students for most of their human contact in the harried atmosphere of the classroom, teachers were able to sit in relatively uninterrupted settings to discuss professional matters; instead of making decisions about a single classroom individually, they became involved in joint planning for the entire school; and instead of having few, if any, adult sources of feedback and encouragement about their teaching performances, they worked in a supporportive environment in which commendations for action were frequent from peers, outside experts, ...

Peer support, the sharing of ideas, the experience of collegiality and group decision making, were especially prized by the ARCS teachers. As temporary systems the action research teams involved individual development, providing teachers with opportunities to experience and practice different roles and functions; and group development, providing teachers with the opportunity to experiment with interdependent behavior and to use different methods of problem solving and decision making to achieve the objectives of their inquiry.

7.3 Creative New Contexts

The action research teams created their own operational contexts which contrasted markedly with the operational contexts of their schools (see Table 14). They organized,operated, and developed new norms and structures in such a fashion as to highlight different assumptions as to what makes for effectiveness in running schools - their schools in particular. That is, by varying the principles used to organize and to operate themselves, the teams made more visible corresponding and contrasting principles in use in their schools. Consequently within the contours of the ARCS project the process of action research emerged as more significant than the product.

For members of the Michigan team the highlight of the project was the opportunity to work together in an atmosphere of collegiality and inquiry:

> LORI
>
> I think being introduced to action research as a process has been the most valuable part of the project for me. In fact, as I look back at the work that we've done and the topics we've discussed in our - in everything that we've done, the fact that we've been able to work within the model made all the difference.
> I see how valuable the model is and see, too, how the model can be used in so many different situations with - . Quite honestly, any number of people, you know, it can be expanded, it can be reduced or whatever.
>
> . . .

Table 14

TEACHER PERCEIVED SCHOOL AND ACTION RESEARCH CONTEXTS

School Context (Permanent System)	Action Research Team Context (Temporary System)
1. Change initiated and managed from the top	1. Change initiated and managed from the bottom, middle and top
2. Hierarchial principal managed	2. Non-hierarchial self-managed
3. Information generated for management - management information system	3. Information generated for everyone - problem solving information system
4. Norm of mutual tolerance	4. Norm of collegiality
5. Norm of convention	5. Norm of experimentation
6. Power concentrated at the principal's office	6. Power diffused in the team
7. Teachers handle limited specific roles and functions	7. Teachers handle different roles and functions, roles exchanged
8. Assignment of tasks to teachers	8. Teachers develop their own tasks
9. Teachers' roles defined and structured	9. Teachers' roles overlapping and flexible
10. Individual "private cycle" of problem solving in the classroom	10. Group "public cycle" collaborative problem solving outside the classroom
11. "Behaviorally" busy setting - reactive thinking - cognitive economy	11. A setting of pause - reflective thinking - cognitive expansion
12. Directed and reactive inquiry	12. Participatory and collaborative inquiry
13. Immediate, concrete, "in-classroom" perspective of classrooms and school	13. Detached "out of classroom" perspective of classrooms and school
14. Short term and quick "on demand" problem solving	14. Sustained deliberate inquiry
15. Recipe knowledge	15. General programmatic knowledge

JIM

I think the thing that sticks out most in my mind - there were a lot of fun things, a lot of exciting things, meeting teams and making presentations - but I think even greater than that was just working with four or five people that really had skills but never just really refined them and seeing the awareness of that group working together in terms of their own capabilities, what they have as individuals they can perform. I think it was exciting to see people that can work on a day-to-day basis really use some skills that they have and have built since that point and just working together . . . I've always believed in a teaching staff there's a number of skills that we just don't tap that people have. And it was good to see them come out and I think a lot of people felt good about it and felt good about themselves.

* * *

ANNE

It really helps you, in your daily work life to know about other people and to know what they're doing in their job and what you're doing, and so forth. And that's kind of important to me, I like the collegiality and that's, of course, one of our proposals, and I hope that we will be able to spend more time either working together toward something, maybe just having some time where we can, you know, have some collegiality with each other . . .

I said this before, you know, its a shot in the arm, but I wish more people could go through a process of feeling this is something that I am doing that is really good and everybody is going to get something out of this eventually.

* * *

FLORENCE

Well, the one thing that stands out for me is probably mainly the fact that we all kept our interest level in it, you know, it didn't wear like other projects usually do. We didn't mind going to the meetings. I think that's the major thing that really surprised me, the interest . . ..

When I'm criticized I . . . my first reaction to that ordinarily is if I'm criticized, I feel defensive but with these other people in this group I don't feel defensive because we work so much together on other things and criticize each other and we know there's never anything personal.

For the New Hampshire teachers the opportunity to conduct research, to participate in a collaborative process, to travel, and to be viewed as knowledgeable professionals were highlights of the ARCS project.

JOHN

> What really stands out for me is: Working with the people mostly and getting to know the people that have have been on the team, working with them is the most important factor . . .. I'm a person who never writes. I would call someone on the telephone rather than write them a letter - wherever they were and if they couldn't get to a telephone tough luck, they just didn't hear from me - that's how bad I am about writing. And I've done what I think is a lot of writing about different things in this project that stick out in my mind. Going places and seeing other people and other people's way of doing things and discovering you're really not that far off the track from everybody else - that's been kind of a reward . . .. Meeting other people. Being a (I hate to use the term because its not really true) but being thought of as an expert in something so that when you're meeting them they have the feeling that you know something and you even have the feeling that maybe you know something. That's a good feeling, good experience.

* * *

TED

> What stands out in my mind is the idea that the word research no longer is scary . . . I think before if somebody said you were going to do a research paper, I always used to run the other way. That's one thing that stands out. Another thing that stands out, I think, is the report that we did. I was kind of amazed at how technical it did turn out and I would think we added a little bit to the knowledge of burnout. The struggles that we had losing our way many, many times, the frustration sometimes, not agreeing with the final topic stands out a little bit . . . the idea of wanting to produce something that would be very, very concrete and useable and hoping to get the staff a little more excited about the junior high.

* * *

BROOKS

> Looking back over the two years of the project what really stands out for me is working as a group, really working closely with a group that meets consistently on a basis that has a common understanding, common goal. And I guess the fact that we came together as not knowing where we're going to be but eventually hammered out a direction and I thought that fact that there was no prescribed or set agenda - that we set our own agenda I

> thought was really important for the group to have continued and have that commitment. Rather than, you know, sometimes I make the excuse, well, I don't really want to go to this meeting so I'll think of an excuse for why I really don't want to go, why I really don't have that commitment to go and I think that the commitment of the group was really above and beyond any group that I have worked with - school-related. I thought that was, in my mind, stands out as really important . . .. Basically. I think the way our group worked was that's what the key was, that it was a collaborative research group and I think the workings of that was really what was the focal point. I wouldn't change anything, I mean, I thought it was a - the organization of the research project was well thought out, served the purpose for which we were brought together for and really evolved a group from that and just strengthened it. It was fine. I also think that it has to do with personalities, too. I mean, I can see that. But each group is different. Basically your assumption is that each group is different and that it will find its own identity. So to impose any kind of structure on it would be to negate the outcome of the group.
>
> * * *
>
> ELLIOT
>
> Let's say, I don't get to do too many 'wild' things any more so I enjoyed the road trips and found some intellectually interesting things happening on the trips to Syracuse and to Montreal.
>
> I guess they weren't even so intellectually exciting as personally exciting. Just being able to hear speakers make presentations who I may have quoted in a paper I wrote somewhere along the line, things like that.

It was not the prospect, probabilities, or specifics of school change that stood out at the end of the project for the ARCS teachers - it was the process of collaboration which led to personal and professional growth. In Brooks' words, "Some very ordinary teachers became very extraordinary in a short period of time." In the teachers' view, it is the process of collaborative action research that lasts - that has enduring value. This perspective of making change through the action research process is expressed clearly in the principle recommendations of both ARCS teams.

The Michigan team's study (see Final Report in Appendix D) urges that:

1. The process of collaborative action research be applied in all future staff development and school change efforts. The collaborative process should

allow teaching staff to have significant influence in selecting the agenda for school and curriculum change and give teachers ownership of change studies. Collaborative action research will provide the opportunity for school improvement and educational change through a bottom-up rather than a top-down approach.

2. Scheduling is so complex and affects the quality of life for teachers and students in such profound ways that the scheduling process must reflect the full participation of teachers. The process should be initiated by the last quarter of the school year. A scheduling committee consisting of teachers and using the action research process should be established to develop and implement the 1984-85 schedule. When the committee plans the schedule it should take into account the recommendations of this report.

The New Hampshire team's study (see Final Report in Appendix D) urges that:

1. The effectiveness of the collaborative action research model within an actual project for change should be studied. Such a plan would probably involve the leader of the change project (e.g., principal, supervisor) as a member of the action research team.
2. A future action research team could create and implement a program for reducing stress in the school and then evaluate this program by using the HSS in a pre-test/post-test analysis. For instance, involvement in decision making seems to relate to levels of morale/job satisfaction. Conclusions drawn from this study and others reviewed suggest this important organizational change should be studied by administrators and teachers.
3. Teachers who are now experienced in the collaborative research process could use their skills in promoting the process with other school staffs at other sites.

In summary, both teams recommend that the context created through the collaborative action research process become the school's context for decision making and initiating change. For the ARCS teachers the process of action research is its most important product and has the greatest potentiality for effecting change in schools.

8.0 FINDINGS: INDIVIDUAL CONTEXTS

8.1 Test Scores

Participants for the two collaborative research teams were selected to represent a diversity of cognitive-developmental stages based on their scores on the three empirical measures of developmental stage, the Loevinger WUSCT, the Hunt PCT, and the Rest DIT. Since there are no single valid measures, an overlapping assessment was employed with the three tests serving as proximate measures. Each is viewed as an indicator of how each person processes or makes meaning from experience by developmental level. The Loevinger largely assesses how an individual thinks about or conceptualizes about self; the Hunt assesses how a person conceptualizes issues of teaching and learning; and the Rest assesses how a person processes social-justice questions.

A working hypothesis emerged in Year 2 as a result of observation of the teacher's behavior and perceptions in the collaborative group process: a teacher's level of interpersonal awareness and sensitivity affects the organization and process of the collaborative research team. The area of interpersonal sensitivity cannot be readily extracted from the data base provided by the three developmental tests mentioned above. Thus a fourth measure, the Selman assessment of interpersonal functioning, was added to the data base and used as a cross check in the analysis of teacher's perceptions regarding the issues of change in the context of the classroom and school, group process, leadership, the principal, and goals/outcomes of the action research.

Table 15 presents the teacher's scores on each of the four assessments of development. Table 16 provides information to interpret the developmental test scores.

The objective of this research project was to investigate teachers' perspectives at different developmental levels. The New Hampshire team's data was chosen for in-depth presentation in the findings which follow. Comparison and contrast with Michigan team members (particularly in Sec. 8.2.2 and Sec. 8.3) is presented in summary form.

The teachers' perceptions regarding a variety of issues in the collaborative action research process and within one school context is presented in the findings to address the question of qualitative differences between developmental stages.

Analyzing data on individuals without contamination by the thoughts or behavior of other team members was a concern. For instance, as a group coalesces, the conformists will tend

94

Table 15

Cognitive/Developmental Stage Scores

	Sex	Yrs. of exp.	Ego Level WUSCT TPR Score[a]	Cognitive Complexity PCT[b] CL Level	Moral Judgment DIT[c] %P Score	Interpersonal Stage Global Stage[d] Score
New Hampshire						
Jack*	M	17	5	1.8	32%	1(2)
Ted	M	15	6	2.3	63%	3
John	M	19	7	2.0	46%	2(3)
Brooks	F	8	7	2.0	40%	4
Elliot	M	11	8	2.2	75%	4
Michigan						
Jim	M	9	6	1.8	25%	2
Lori	F	12	6	1.5	32%	3
Anne	F	10	6	2.0	43%	3(2)
Florence	F	23	7	1.7	32%	3
Jane*	F	16	8	2.0	58%	3

*Jack and Jane left the teams after Year 1.

Table 16

Cognitive/Developmental Stage Scores Interpretations

a. The WUSCT ego level scores have been transformed into a 1-10 interval value according to the following convention:

Ego level	1	2		3	3	3/4	4	4/5	5	6
Interval value	1	2	3	4	5	6	7	8	9	10

b. Hunt's Completion Test of Conceptual Level generates scores that can range from 0 to 3. Scores of 1, 2, or 3 on this test may be interpreted as indicating the following conceptual levels:

Score of 1 = Categorical judgments, stereotyped thought. Other directed; accepts single rules.

Score of 2 = Self-delineation, awareness of alternatives, and awareness of emotions.

Score of 3 = Abstract internal principles, awareness of multiple viewpoints.

Hunt has classified CL scores as follows:

0.5 to 1.0 = low CL score
1.1 to 1.4 = moderately low CL score
1.5 to 1.9 = moderately high CL score
2.0 and above = high CL score

c. The %P score represents the percent of principled moral judgment responses (Stage 5A, 5B, and 6) in the person's total responses. Rest and Davidson (1980) have classified scores into quartiles:

0 - 38% = low P score
39% - 58% = moderately low P score
59% - 77% = moderately high P score
78% - 99% = high P score

d. Selman's interpersonal stage score represents the global stage score of group organization and process:

Stage 0: physicalistic organization
Stage 1: unilateral relations
Stage 2: bilateral partnerships
Stage 3: homogeneous community
Stage 4: pluralistic organization

to conform to the rhetoric level of the group, and they are not really asked to generate problem solutions in ambiguous situations. To counteract this, it was decided to concentrate the initial analyses on the beginning parts of the two-year project before teachers might become socialized to the rhetoric to see if teachers' key words and phrases would show structural differences related to their developmental stage scores.

The structural characteristics of the early talk was also chosen because both university researchers had agreed to perform the same roles during the initial eight meetings (first three months of the study), primarily stepping back from any direct leadership function to a maintenance position which encouraged teachers to discuss their classroom and school contexts, possible problems or issues to be researched, and their individual choices for research topics and methods. Thus, both university researchers were following the same formats in the beginning; and later on when it became apparent that there were some differences in leadership styles, the reason was reinforced to look to early meeting transcripts for how the individuals approached the problem-solving sessions.

After the early transcripts were analyzed, the results were compared to the teacher's actions and perceptions in the duration of the project.

8.2 CASE HISTORIES

One would expect persons at different developmental positions to respond differently to issues related to the group organization and group process as well as the content of the project and the research process in a collaborative research team. Although all team members contributed to an effective collaborative research process, each added his/her own perspective and meaning system.

This research investigates to what extent a developmental model provides a framework for understanding the growth and maturity of observable adult teacher behavior in the collaborative research process. To this end, the developmental theory is used retrospectively to order the data observed during the natural workings of a collaborative research team.

The ARCS project provides a real world glimpse of adult teachers' thinking and acting. Neither the tests for developmental stage nor the reflective interviews alone capture teachers in their real world in which they interact with others in a complex array of pressures, expectations, and roles, seldom displaying the order which the developmental stages imply. The current research project observes how the teachers move in the real world of a collaborative research team and tries to understand the range of behaviors exhibited.

Since this study has been of a recursive nature, the following questions were developed during the process of the study.

Developmental theory posits development of individual self-concept, ego maturity, conceptual complexity, moral judgment, and interpersonal understanding in a series of stages. There is a difference between a person's reflective thought about an issue or experience and the person's functional expression of that experience. When is a teacher consistent or inconsistent in his/her thinking and acting on a particular issue? In a particular situation? To what extent do situational factors in the team or school context cause variability in thinking/acting? A person's functioning at positions lower than the highest he or she is capable of is not necessarily an indication of immaturity, but must be looked at in relation to the demands of the social situation and the interpersonal context.

It is important to gain some sense of how stable a person's developmental understanding is across a range of issues and experiences. Does the person think about each issue at roughly the same developmental position? Are there teachers with fluctuating stage patterns across issues? Do certain issues develop more rapidly than others? What happens for the teacher who is out of pace on a team?

The current research project investigates a critical area in need of study - the longitudinal, week-to-week interaction of teachers in a semi-structured situation: the collaborative research team meeting. The current project could be called a planned intervention in that the idea of teacher as researcher is new to most schools and may be a challenge to teachers involved. It may challenge some teachers to new learning, overwhelm other teachers, and seem to be simply "one more thing" to others. Collaborative action research is a new concept in education, and we have no choice but to try to learn how our teachers become "research" wise and to provide opportunities for them to do so. By observing the natural process, we seek to investigate how this concept can be best put into practice.

Robert Selman (1980) has suggested the need for developmental researchers to use a "wide angle lens" in surveys of human learning and development. We have found the strength of the developmental stage approach is in providing a model for understanding the organization, principles, underlying strategies, and changes in attitudes, and not in specifying or predicting particular attitudes themselves. Of course, there are difficulties when one tries to present a snapshot description of what are very dynamic and fluctuating processes. It is hoped that the reader will develop an image of the real-life teacher as each of the following case histories is presented issue by issue.

8.2.1 Attitudes Toward Change

The findings discussed here are in response to the working hypothesis that a teacher's developmental position influences his/her perception of power, decision making, and change issues in the contexts of the school and the collaborative action research process. The inference made is that the way in which the teacher reacts to change is dependent to a significant extent on the teacher's stage of development. Included in this section on attitudes toward change are teacher perceptions of school change, classroom change, and teacher change issues.

An individual in a specific developmental position will have a different set of attitudes toward change than those in other positions. These attitudes are based on the way in which they have given change meaning for their lives.

Characteristics of the stages of ego development are presented in Table 17 which shows some milestones of ego development.

This section portrays the developmental stage of each of the five New Hampshire teachers, Jack, Ted, John, Brooks, and Elliot, in terms of their comments about change. Sources of these comments, whether from documentation, interview, log, or transcript, and the date are indicated in parentheses following comments (samples of each source can be found in Appendix B).

JACK

Jack scored at the Conformist ego development stage. This placement was indicated by his score of the Washington University Sentence Completion Test of Ego Development.

At the conventional position, for example, change is perceived as a simplistic way to solve problems and as an external process. The conventional thinker is more concerned with issues of authority and control, with minimizing controversy, and with maintaining rules and implementing policies than with questioning the purposes of rules.

In discussions during the first eight meetings, Jack mentioned change issues such as the effects of a changing society on the child, parent, and teacher and change due to federal mandates on placement of the handicapped. Concerning teacher change, he mentioned "coping skills," which, he said, can't be taught but can be learned from experience. In respect to changes introduced in the classroom, he mentioned only the change of trying to call students by their first name. From the excerpts of Jack's remarks that follow, it is evident that the changes that Jack focuses on are external to the system or deal with external behavior. There is little

Table 17

Some Milestones of Ego Development

Stage	Code	Impulse Control Character Development	Interpersonal Style	Conscious Preoccupations	Cognitive Style
Presocial Symbiotic	I-1		Autistic Symbiotic	Self vs. non-self	
Impulsive	I-2	Impuslive, fear of retaliation	Receiving, dependent, exploitative	Bodily feelings, especially sexual and aggressive	Stereotyping, conceptual confusion
Self-Protective	Δ Delta	Fear of being caught, externalizing blame, opportunistic	Wary, manipulative, exploitative	Self-protection, trouble wishes, things, advantage, control	
Conformist	I-3	Conformity to external rules, shame, guilt for breaking rules	Belonging, superficial niceness	Appearance, social acceptance, banal feelings, behavior	Conceptual simplicity, stereotyping, cliches
Self-Aware Conscientious-Conformist	I 3/4	Differentiation of norms, goals	Aware of self in relation to group, helping	Adjustment, problems, reasons, opportunities (vague)	Multiplicity
Conscientious	I-4	Self-evaluated, standards, self-criticism, guilt for consequences, long-term goals and ideals	Intensive, responsible, mutual, concern for communication	Differentiated feelings, motives for behavior, self-respect achievement, traits, expression	Conceptual, complexity, idea of patterning
Individualistic	I-4/5	Add: Respect for individuality	Add: Dependence as an emotional problem	Add: Development, social problems, differentiation of inner life from outer	Add: Distinction or process and outcome
Autonomous	I-5	Add: Coping with conflicting inner needs, toleration	Add: Respect for autonomy, interdependence	Vividly conveyed feelings; integration of physiological and psychological, psychological causation of behavior, role conception, self-fulfillment, self in social context	Increased conceptual complexity, complex patterns, toleration for ambiguity, broad scope, objectivity
Integrated	I-6	Add: reconciling inner conflicts, renunciation of unattainable	Add: Cherishing of individuality	Add: Identity	

NOTE: "Add" means in addition to the description applying to the previous level.

sense of internal change, little sense of individuals dealing with change, and a tendency toward stereotyped categories. Jack's thinking seemed concrete, at times multiplistic, but most often restricted to black and white perspectives.

Jack gave the impression that he saw changes as external and probably imposed acts. He also indicated that he was not interested in changing himself. He said, for example, that changes are usually made for financial (i.e., external) and not educational reasons. He also said that he didn't see that there would be much new change with the new principal and that there was nothing about his classroom or what went on in it that he wanted to change (Documentation, 10/21/81).

In a discussion of student rescheduling, Jack said changes in students ~~that~~ involved scheduling shifts were made because of parental pressure, another example of an external pressure for change, while John said homogeneous grouping had been eliminated in spite of parental pressure (Documentation, 12/2/81). At times Jack altered the facts to justify authority for change coming from an external source.

Pressing problems in education, Jack indicated, are also a result of externally imposed change:

> I'm, I guess, concerned about the changes I've seen in the last three or four years with the federal mandates on handicapped. I've found just in this school a tremendous amount of emphasis has gone into LDs, emotionally disturbed, you name it and boom!, the funds are all channeling there. The average to above average student is sort of falling by the wayside and being forgotten . . . I think we've gone too much overboard, too soon, too quick.
> (Interview, 9/81)

When change is seen as being externally imposed, it can become manipulative. Jack's point reflects a conformist administrative view. He often seems to take a rather manipulative view of his own role as a transferal of the way in which he sees the roles of those whom he regards as higher authorities. He described, for example, the way to move a student from one class to another as being "not to tell the Guidance Department" because it was easier to do by not explaining the reasons, which would mean "more paperwork." He also described how he tries to "convince teachers it was their idea" to make the change rather than tell them the student wants a change. These examples appear to be methods of making changes without "making waves" and yet staying on the good sides of those with whom he interacts.

Jack's attitude can be explained by the fact that he perceives change as either external or unilateral. Changes can be made by one person (himself) for a particular reason without necessarily seeing or needing to consider the larger context and any possible ripple effect. When Jack talked about informal changes that he had made, often as house coordinator, he said that maybe he would "catch hell" if he was found out, but it was worth it (Documentation, 10/21/81).

Change is perceived by Jack as a clear, one problem-one answer situation. If it can't be done one way, then it can't be done. There is less need for thinking about alternatives or gradations in an issue. Change is not seen by Jack as a process but as a single product. Jack talked, for example, about individualizing instruction and how it was impossible to carry out and that any teacher who claims they are individualizing is a liar (Documentation, 11/4/81). In another meeting, Jack said that the morale problem among teachers was only solvable depending on who came in as principal (Documentation, 10/21/81).

On the issue of principal selection, Jack clearly separated the principal's selection from the collaborative research team's process. Jack read what was in his log, explaining that the team's discussion should not dwell on the principal issue since it was past and not a part of what the team was doing. In addition, Jack said it was not his responsibility (Documentation, 10/28/81).

According to Jack's perspective, change is not a process over time, which might be seen in a context of past, present, and future implications; it is a one shot episode. On changes in the classroom, for example, Jack reported:

> The only change that I ever made that I planned, which isn't just the classroom, but what I found as years went on . . . what I considered to be a bad habit and improper . . . to call kids by their last name . . . And I've tried to work very hard the last three years to learn to start calling kids by their first name which is what I think they ought to be called by . . ." (Transcript, 11/4/81)

And on a discussion of teacher change, Jack said:

> . . . you cannot teach them how to deal with that. It's something that they either had to start with or they learn from experience. Now, probably every one of us would deal with things differently today than we might have our first or second year of teaching; things that I would dare to do with them now because I know that I can turn them on and off a little better . . .
>
> (Transcript, 11/4/81)

TED

Ted scored at the Self-Aware development stage. This placement was indicated by his score on the WUSCT.

At the Self-Aware position, Ted was concerned that people should "care about" the changes that are occurring. He was concerned about external approval and working in a community where understanding, compassion, and kindness are supports of the most essential kind. His attitudes toward change included seeking acceptance or mutuality from others, whether they are parents, administrators, or other team member.

Ted described himself as being in a period of transition in which he is consolidating a major period of personal and/or professional change. In discussing the project, he said:

> We have a golden opportunity to contribute by making action research a catalyst for improvement and change. (Interview, 9/81)

In its almost stereotypical context, this statement appears to be related to Ted's Self-Aware stage in that it carries an idealistic concept of privilege and responsibility, a concept Ted often espoused.

Major points distinguishing Ted's perceptions of change from those of other team members were his: 1) global perspective on change, 2) abstract thinking capability, 3) view of change as a process, 4) perceptions of what should be changed versus his ability to act on these perceptions, and 5) view of change based on understanding and caring.

Ted responded very differently than other team members in respect to perceptions of the process of change in the school. Ted indicated that he viewed change as a process, which contrasted with Jack's conventional perspective of change as a product. Ted said:

> The process of change in this school starts with a need. This need is transferred to the administration who, usually in big decisions, appoints a committee to make recommendations . . . In the past, the principal ruled by committees. The school-within-a-school system was a major improvement over past practices at the junior high. However, many faculty members perceive this change now as a major reaction to budget cuts, staff reduction, heavier schedules and bigger classes . . . (Log, 10/14/81)

In its global rather than specific perspective, the above statement reflects a developmental position in Ted's thinking that is below the Conscientious stage and, together with its listing of multiple reasons, suggests the Self-Aware stage.

All of the other teachers on the team disagreed with Ted's perception of the relationship of the principal to student and teacher change. Ted said that, in his short time at the junior high, the principal has had little effect on change. He said, "Teachers (committees) were in the front when it came to setting policy" (Transcript, 11/4/81).

Additional examples of Ted's multiplistic/abstract thinking are his comments that what hinders change is "lack of money, training, personalities . . . ." (Transcript, 11/9/81) and his comments about positive/negative teacher and student change:

> The most positive change at the junior high was the idea of schools-within-schools. Examples of negative change are scheduling problems and the gutting of the school-within-a-school program. Others are less teachers, translating into less individual attention, and bigger classes and more and more students in need of special help with less and less resources to meet these needs.
> (Transcript, 11/4/81)

Both of these typical comments show the multiplistic, abstract thinking that is reflected in Ted's high conceptual level scores. In terms of teacher change, Ted questioned whether or not a teacher can learn a sense of humor and a sense of performance:

> It's very hard, I would think. I think it's a shock to . . . throw you right into a class, and the kids here, I think, are nice kids but, like Jack says, it's a shock to your system. If you don't have that when you walk in, it is all the more hard, a lot more difficult than teaching subject matter. (Transcript, 11/4/81)

Multiplistic thinking is evident but there is nothing in this comment that could justify a score at higher than the Self-Aware stage because of the lack of specificity, even though there is an ability to see the more global perspective.

In another situation in which John described how a student had been moved into his class because it was thought he would do better there, Ted said he approved of matching teaching/learning styles and that it could be done if they were sophisticated enough. Jack simplified the issue to the fact that he (Jack) couldn't reschedule every student who came up and said they hated the teacher. Ted responded, "You could make a farce out of it, Jack. You could make a farce out of anything, but it could be done" (Documentation, 11/9/81). Ted described Jack as a good friend for the five years of Ted's teaching at the junior high school, saying they often "jabbed" at each other in conversations. However, this was one of the few times that Ted responded to Jack with an assertive comment rather than deferring to Jack's 17 years of experience and position as part-time administrator. In this instance, Ted may have been showing his frustration with Jack's way of devaluing and of simplifying what was to Ted an important and many-faceted issue.

When Ted discussed the kinds of growth occurring in the classroom, his comments exhibited a transition to the Conscientious stage. In the statement below, words in brackets indicated key terms he has used which are typical working concepts at the Conscientious stage in which the person can recognize individual differences, is concerned with achievement of one's own standards, but also demonstrates responsibility and duty to ideals and expectations of one's career.

> [Individual growth] - academically and socially - are my major goals for each one of my students. Teachers must realize that [failure is a real possibility]. We only have them for a short time each day . . .. Teachers are constantly changing . . . my program is becoming more [responsible] to student needs, both in and out of the classroom - each year as I mature and become a [better teacher and person].
>
> (Transcript, 11/4/81)

Ted's perception of what should be changed was often in contrast with his ability and willingness to act on his beliefs. Ted's beliefs, which sound like formulas for what should be done, did not match his actions on the collaborative research team. In the classroom, however, there is growing consistency between what Ted espoused on "individual growth" in the quotes above and what he feels he can act on as shown in the following situations.

Ted said it was impossible to individualize with five classes, that they (the teachers) had to shoot for the middle and try to help out each end. Brooks called this the "shotgun" approach. John said he couldn't find the "middle" this year. Ted, however, showed interest in John's process of giving separate tests for high and low performance students (Documentation, 11/4/81). Ted recognized the need to individualize and began to act on it. He designed a separate test for the low ability students in his social studies class, and he arranged that every Wednesday be a project day in which students would work at their own level and all would experience some success and achievement.

When Ted and the others were planning to interview other teachers in the school as part of the action research project Ted was reluctant because he was worried about the responses of other teachers. He was worried that others would not share his global concern for understanding and caring.

Ted said, "If you go to see people (with a questionnaire), how do you know they'll care?" Responses to Ted are interesting. Brooks said, "You'll know right away; they'll tell you to get lost or they'll answer the questions." Elliot said that there are five of them (on the team), also that they can each take those teachers they know (Documentation, 12/16/81). It should be noted that Brooks, who is at the Conscientious position, felt both confident and assertive with other adults on the staff. She was less dependent on their approval or acceptance because she had defined her own self system*. Elliot, at the Individualistic stage, recognized Ted's concerns in this situation and made a suggestion to put Ted at ease. He suggested that teachers on the team could talk to those teachers they already knew well (Documentation, 12/16/81).

Ted indicated he believed strongly in the concept of democracy in which people do "care" about the welfare of others. In this conception, he reflected thinking characteristic of the Self-Aware stage. This contrasted with Jack at the Conformist position who was very pragmatic about decision making in the district.

In typical fashion, Ted entered a conversation by asking a question which he seemed to direct to Jack. "Do the school board, superintendent, etc., know our feelings?" Jack said it was a question of knowing them versus caring about them. Ted said he couldn't believe they wouldn't care if they knew. Ted also said that because we live in a democracy, they should care if they know. Jack answered Ted's question by sayng that Ted was interested in his own feelings but that others weren't (Documentation, 10/28/81).

Ted's focus on feelings, although they were expressed in vague terms, was characteristic of his Self-Aware ego position. He was beginning to replace group accepted standards with his own self-evaluated standards but couldn't act on them yet. To Jack at the Conformist position, Ted's focus on feelings seemed to add a contingency that upset Jack's clear-cut world. Jack dismissed the concern as perhaps selfish of

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*Kegan (1982) defines an Institutional stage of development (equivalent to Loevinger's Conscientious stage). The person operating from this meaning system is embedded in personal autonomy and self-definition, assuming authority, exercising personal enhancement, ambition, or achievement.

Ted and turned the conversation back to the external realm. When Ted pushed a bit further with other possibilities and alternatives, Jack was unwilling to defer to him and resorted to his own authority as part-time administrator by cutting off the conversation with the implication that something was being "done."

Jack preferred the more straightforward, simple, and clearcut solutions (e.g., one group of people affect the teacher, everybody else does not). Jack said, "That if he looked at the diagram on the board in terms of what directly affects you as the teacher, then federal legislation, director of special services, and principal have direct affect; others have little affect on you" (Documentation, 10/28/81). Ted said the administrative decision-making process also depends on who the people are in each role and thus suggested that persons fill roles differently.

Ted and Jack had many interactions during the early meetings. Ted directed questions to Jack, perhaps in deference to Jack's experience and administrative position, but Ted added too much complexity to what seemed to Jack to be a clearcut description, a simple world view. When disagreements resulted, Jack often used his authority status effectively to cut off further discussion.

JOHN

John scored at the Conscientious development stage. This placement was indicated by his scores on the WUSCT.

The attitudes toward change which characterized John at the Conscientious stage were: 1) a stable self system and the tendency to use formulas and predesigned solutions to new problems, 2) idealism and a long-term perspective on change, 3) self-evaluated standards, and 4) recognition of individual growth and change.

John was very stable and in control of what Kegan (1982) describes as his own self-system in the school. He felt confident and assertive about his opinions. Unlike Ted, affiliation and acceptance were not his ultimate needs from colleagues or authorities. John was always concerned with keeping his own self-government stable, which is the crucial limiting factor in the Conscientious stage. John's extreme stability at times became a rigidity toward change in general. When his plans, curriculum, and school committees were running smoothly, John was confident of control over his system and surroundings. But when conflict and new ideas arose that could cause his stable system to be threatened, John's initial reaction was inflexibility, and he used every strategy he had to allay any possible controversies. Although he might have preferred a school decision-making policy that was different from that of the principal, he did not want to risk his own curriculum with open-ended encounters that may lead to conflicts. Since his ultimate goal was self-maintenance, he was therefore concerned with maintaining the institution.

John's comments in the first eight meetings suggest that he expected that action research would improve scheduling. His first choice in establishing a research question was to look at the laws and the requirements of scheduling. This concern is typical of the conventional thinker's reliance on laws to guide future actions. The following is a conversation with John documented by the research assistant as participant observer on the team.

> John said that to research the issue of scheduling, he would want to look into state laws on class time, required classes, school time; on ideal class length for junior high and the possibility of it being different for different teachers/subjects; and on plans other schools used to overcome problems raised by administrators. Once he had all that information, John said he would work out two or three schedules and present them to the powers that be. He would also be armed with the information when the issue arose (Documentation, 12/2/81).

Although his comments about classroom change were general, there was a Conscientious-stage sense of self-evaluated standards and long-term goals, as is indicated by the following remarks.

> . . . you have to change because of time. You have to change because of what you are teaching. But I basically try to keep . . . all through these kinds of changes . . . I try to keep two things as my goals (in science) that I want students to learn. One was how to take notes and the other was how to write a paper. How I have taught (this) . . . has been undergoing little revisions constantly down through the years . . . (Transcript, 11/4/81)

John's tendency was to use simplified courses of action in response to complex issues. On the other hand, there were times when John's comments started out as simple formulas but eventually showed that he had thought about the complex side as well. John feels that being a science teacher contributes to his comfort in seeking, using, and presenting formula solutions. In a discussion on switching students from class to class, John provided a simple formula: teachers should do badly so they don't get extra kids. After further discussion, John was able to articulate a more complex view of the issue saying that the range of teacher styles in his science department allowed for switching kids successfully.

John described himself as in a period of stability having just come through a huge transition period in life and work. As he described various changes in his positions, pay, and assignments, he exhibited the long-range perspective and idealism of the Conscientious stage. He also saw the contradiction in making changes to satisfy external demands when the internal needs of teachers and students are neglected. He exemplified the abstract thought evident at the Conscientious stage.

> In 10 years, I have had seven room changes. What I am to teach has been changed five times . . . I enjoy teaching 7th and 8th graders but I hate the changes we always make because of money, convenience and the whims of principals seldom for the good of students . . . (Log, 2/10/82)

In terms of changes which might result from the action research project, John responded to Elliot's negative skepticism with the sense of contingency and idealism characteristic of the Conscientious stage.

> . . . I think if we come up with something that is worthwhile, that's not going to cost them money, that we can convince some others that this is worthwhile, we'll get the changes, and I'm not even so sure if it didn't cost a little more money, we still could get changes anyway . . .
> (Transcript, 11/18/81)

At times, he was exasperated with limitations on changes he would like to make and also with externally imposed change itself and retreated to his self system of the classroom. The following statement shows the self-evaluated standards evident in the Conscientious stage. There is a sense of survival within the system without being a pawn of fate.

> . . . as a group of science teachers we dedecided to do things but at the end were told some facts we could have been told earlier (so the change didn't happen). I felt here we go again. I am now back to give me a room, chalk and students and I will teach. That's where I started in 1962.
> (Log, 2/10/82)

In response to issues of teacher change, it was noted that John, like Ted, seemed to recognize individual differences but did not place much weight on individual growth; instead, he spoke very generally.

> I think junior high school teachers are born - they're not trained. And they have that

> common sense, the humor . . . the survival factors. Everything is already in them when they get here and it brings it out. I don't think you can teach them.

In this next comment, however, elements of the concern for individual growth can be seen that are more typical of the Conscientious stage.

> When you've done something in your classroom that you have not done before, all of a sudden it comes to you, this little brainstorm, halfway through saying something, and you slowly make a change and you look out at those faces and can pick up the ones who get it and the ones who haven't. I think that's about the only way you can see it within a classroom - in that instant, the faces tell you if you've missed the point, you haven't got it across to them at all . . .. I don't know how some of these things could be documented for small changes with what you're doing. (Transcript, 11/4/81)

An impact on John during his participation in the project during Year 1 was his contact with other teachers (see Research Project and Process Report - Teachers as Researchers, Appendix C). He said he liked the contact with teachers that he was getting through his writings in the project and it was worth it for that (Documentation, 11/18/81). John evaluated his own participation in the project and changes in himself in terms of individual growth just as his perception of change in the classroom focused on individual growth.

BROOKS

Brooks also scored at the Conscientious development stage, as indicated by her scores on the WUSCT.

There are a number of major points which characterized Brooks' attitudes toward change: 1) like John, she recognized the complexity of change in the school system and change as a process within it. As a result of her lack of influence on school decision making, she felt out of control. Her perception of change as complex encompassed her interpersonal issues; 2) she wanted to be in control, to have as stable a self system as John; 3) she could recognize the paradox involved in change but reacted conventionally; 4) like John and Ted, individual growth was equated with change, but she was even more capable of being very specific about the personal changes in herself; 5) she recognized psychological causality behind individual growth and was thus moving in this dimension to the Individualistic stage; 6) like John, she resorted to the use of formulas and predesigned courses of action, and she had the ability and willingness to act; and 7) she exhibited abstract, reflective thinking in relation to the process of change in herself and the school.

Because Brooks was in transition to the next stage (the Individualistic stage) in some dimensions of her thinking, because she had less experience in the school than John; and because she is a woman, the Conscientious stage characteristics were manifested differently in Brooks. She was less in control of her own self system in the school. Although she was confident and assertive interpersonally, she was in conflict when acting with the principal and with the decision-making systems of the school and district. Her interpersonal orientation had not provided her with power. In contrast, John had been an insider in district decision making (i.e., he formed the original staff development committee, set policy as a result of that committee work, talked to and influenced school board members and principals of other districts, and had a close working relationship with the superintendent of schools regarding the staff development committee). Brooks seemed to have been active on committees in the school, in her area of reading and later on the principal selection committee, but she had experienced little sense of power or control in decision making.

Her attitudes toward change, especially school and district change, seemed affected by her inexperience in positions of authority and her personal transition in developmental stages. She was just as concerned as John with keeping her own self system stable and recognized that something more was needed in order for her to cope with changes in the school. This quest for "something more" was one reason she joined the action research team. She had the teaching skills and achievement orientation but seemed not to have been able to succeed in applying her abstract conceptual problem solving abilities to the decision-making process of the school and district. Being a woman in a male-oriented system of authority, she seemed to have gone as far as she could without full knowledge of or influence on decision-making processes. Her efforts in the change processes of the collaborative action research team seemed to be to hold onto and develop her growing sense of herself and to extend her understanding of the informal and formal decision-making processes in the school and district.

In a conversation about decision making in the district, Brooks discussed real vs. perceived power. When Ted said that, due to the financial crunch, more decisions seemed to be top-down, Brooks said that there were also outside political groups that influenced change or instigated change. Brooks also said that sometimes the principal doesn't control change, that there are political ramifications. She noted that there was "a power structure we don't begin to understand." She had once felt that teachers should have more say and "got my little toes stomped on" (Documentation, 10/28/81).

In discussing pressing problems in education today, Brooks showed the abstract ability to search for a variety of alternatives within the entire context of herself and the classroom and the school.

> The change, . . ., I see myself as young and vibrant and I just think at 45, am I going to be able to keep the pace? The schedule? The kids coming in, going out, coming in . . . the kids nowadays have an immediacy . . . there's no delay, they can't wait . . . and the change in my job, if you don't like change, don't go into education - that's what I tell people right now. Change is just astounding, from year to year, I mean, it's not just physical movement . . . (Interview, 9/81)

In the process of change, Brooks thought "teachers should have more say." In seeing the complexity of the system, she included interpersonal issues and wanted others in the school to be involved. Brooks thought that teachers will take a stand once they have the facts. She also wanted to give the teachers some ownership in the project. John, too, wanted to present the project to the teachers for their approval and use, but, ultimately, he accepted the top-down dissemination of decisions, and, later in the project, he worked with the assistant superintendent for that goal. Brooks, who had little power or influence in the decision making hierarchy, looked to broad teacher support to bring about changes.

When discussing how the process of change operates in the school, Brooks' reply in her log again showed her complexity of thinking coupled with her lack of influence on decision making and a feeling that there is a "they" in decision making that she cannot reach or control.

> Change under the old principal was instituted by him perhaps after consultation. He then would make a decision. More often than not the decision he made would run counter to the majority of the faculty's feeling. We (the faculty) grumbled a lot about this . . .. It seemed that some individuals were able to influence his decisions more than others . . .. Sometimes changes from the principal's office came from (other) outside sources; i.e., Central Office, superintendent or special area administrators. It was difficult to identify these sources as they appeared as changes from the principal's office. (Log, 10/15/81)

Brooks showed the abstract ability to search for a variety of pieces in the process. When discussing the ingredients of an effective action research change process, Brooks said they needed to have group sanction and commitment; that what they do has to be measurable; that support from the principal was nice but not essential; that she'd like the project to relate to her classroom; that she'd like to evaluate the effects of change on students; and that she would like to be able to look back at the project and say she did something. She saw possible issues for investigation as imbalanced classrooms with no communication with colleagues or with the office, that the pace of day left no time, and that curriculum changes were due to poor scheduling. She said it all related to scheduling and she added that one of the big things is morale (Documentation, 12/2/81).

Brooks did not see herself in control of change at the school or in the system. In discussing student and classroom changes, Brooks' comments indicated that even there she did not always see herself as an originator, though she did monitor change in the classroom.

> A lot of it is just serendipity, it happens. You might get a flash, you might say one or two sentences in the class and it will kind of pull all the ideas and what you're trying to get across to the kids. (Transcript, 11/4/81)

When she described change that she made dealing with silent reading, she similarly didn't see herself as the originator. There had been a schedule decision made by the principal that somehow left 20 minutes free for everyone at one time in the day. She had the idea of filling that time with silent reading for all students, a concept that the district K-12 Reading Chairperson had talked about. So, armed with journal articles pointing out the benefits of schoolwide silent reading time, she approached the principal with the idea and he instituted it.

Despite her contribution to this schoolwide change, she described it as serendipitious, failing to see herself as a key factor in this decision. She may have reasoned with the idea of luck or serendipity because she was able to make a change when she wasn't in the "in group" with the principal. (This is also a typical female response, in which success is regarded as being based on luck and failure is based on one's own shortcomings, Dweck, 1978.)

Brooks expressed a complex view of change which included the recognition of individuality. When talking about what kinds of individual teacher and student change can and do occur in the classroom, Brooks wrote in her log that:

> I sometimes have been able to change a student's behavior and social manners. Behavior re: talking out without being recognized . . . getting students to respond to 'please' and 'thank you'. . . Occasionally I affect individual attitudes - I usually get feedback about attitude changes from a secondhand source or from former students. With 8th grade students, I am sometimes able to get him/her to reflect on specific changes in their approach to classwork. Sometimes we casually talk about the changes in their lives. Sometimes students are able to show me something I'm doing and had to change when he/she 'talks back' and we have a confrontation . . .. Unknowingly, I change students' lives/attitudes. (Log, 11/3/81)

When Brooks talked about changes in the school, she talked about the change as personal. She exhibited the reflective thinking characteristic of the Conscientious stage. More than John, however, she saw change and her own personal individual growth.

> I, personally, am trying to discover the effects that these changes have on me . . .. For the past two years I have talked about finding another job. Why? I just don't seem to be able to cope with all the changes. (Questionnaire, 9/81)

The combination of the above comments indicates thinking at the Conscientious position or above. The beginning of psychological causality, a trait of the subsequent Individualistic stage, can be seen in the following comment, although Brooks expressed motives for behavior in more general terms than we would expect at the higher Individualistic position. When asked, "What helps or hinders change for teachers and students?" Brooks responded:

> The total 'school' (learning) environment. Too much real or imagined stress and an inflexible schedule seems to stand in the way of positive change. Teachers feel uneasy, unhappy, 'ill'-at-ease. This is transmitted directly to students who act out the change in adolescent ways. (Log, 11/3/81)

Beyond changes in individual growth, Brooks continued to focus on attitudes as she discussed the context of the school and the team's research focus. She began, at this Conscientious stage, to see the psychological causality behind individual growth and change. She was also able to see behavior in terms of feeling patterns and motives, a characteristic of the Conscientious stage.

Another indication of Brooks' movement and transition to the Individualistic stage was her recognition of inherent paradox situations. For example, in noting a change in the report card rating scale of which she was not informed, Brooks seemed to recognize the paradox, yet she reacted with a conventional cliche. Recognizing inherent paradox is characteristic of the Individualistic position but Brooks could only respond from her current position at the Conscientious stage:

> What can I say? Teachers are usually the last to know and the first to be affected. (Log, 11/18/81)

Brooks, like John at the Conscientious stage, had a tendency toward use of formulas or predesigned courses of action suggesting, for example, that a teacher can't change a student's "family script" and she only wanted to work with "kids I can help." She listened to Ted's argument for working with kids who aren't functioning in school and suggested he read some materials she had read which suggested alternatives. She used those outside readings as an attempt to find a common ground with Ted as the team searched for a research focus. Ted, however, did not follow up on her suggestion. The interaction illustrated Ted's use of the moral imperative "should" and his tendency to back off when he was asked to be more specific. This might have been a chance for Ted to buy into a joint research focus with the rest of the team. Brooks was able to take her formulas and turn them into actions, while Ted, for whom the "shoulds" are like beginning formulas, could not act on them. This eventually led to a major conflict between she and Ted. In the example above, Ted did not take up Brooks' suggestion to do reading or listening or talking about tapes she had on Project Adolescence and alternative schools. Instead, Ted dropped the subject and chose not to make waves nor find a common ground for his ideas with Brooks or the other team members. This interaction also unfortunately marks the perhaps unconscious choice Ted made to be less committed to the research focus and eventually the research project. This choice allowed Ted to decline active involvement in Year 2 and created a greater conflict between him and Brooks as she saw him "shirking responsibilities."

ELLIOT

Elliot scored at the Individualistic stage, as indicated by his scores on the WUSCT.

He showed perceptions of formal and informal channels of decision making. He understood that certain roles in a hierarcy have certain expectations and also that an individual can be different in different roles. This was consistent with his view of a pluralistic group organization and contrasted with Jack's, at the Conformist position, who saw himself as the same as teacher or as house coordinator (i.e., he is what he is).

Elliot, for instance, said that his responses to the questionnaire on the school organizational environment were different when he was a house coordinator. He also described the difference between talking to a teacher and having them nod and smile when he was a house coordinator and talking to teachers now that he was a teacher again. He said that fear and lack of organizational mechanisms for communication are the reasons for differences in teacher-to-teacher and teacher-to-administrator relations. Jack, on the other hand, said that his answers were the same as teacher and house coordinator.

Increased ability to tolerate paradox and contradiction is reflected at the Individualistic Post-Conventional stage and, along with greater conceptual complexity, is shown by the person's awareness of discrepancies between inner reality and outward appearances, between psychological and psysiological responses, and between process and outcome.

Elliot wrote in his log describing certain discrepancies in school decision making.

> Despite organized pageantry, which would make it appear otherwise, change in this school results from the whims and unilateral decisions of the top 2-3 leaders. Recently (past two years), even the pageantry has been dropped . . .
>
> This pattern of unilateral change decision had adverse effects. Teachers have become reluctant to supply honest and complete input regarding various problems. They feel that what they have to say will be ignored, so why bother? (Log, 10/21/81)

These comments reflect Elliot's perception of the paradox in the pageantry and his seeing the consequences of behavior (unilateral decisions) in terms of motives and traits, characteristics of the Individualistic stage.

The following excerpt shows conceptual complexity that is evident at stages above the Conscientious stage. In the second part of it, Elliot's concern with interaction and integration and with the process of change reflect the characteristics of the Individualistic stage.

> Some thoughts of insuring a satisfactory level of common group understanding about change: the body of knowledge can be divided into certain basic areas: (1) organizational structure; (2) organizational behavior; (3) the role of change agent; (4) change agent status (relationship with organization); (5) planning, implementing, monitoring, evaluating, perpetuating change; (6) the process of identifying problems, i.e., the true base problem, a problem so . . . that change . . . is apparent. As I see it, we have touched on (1) and (6) above. Full knowledge would be helpful in our work. Appropriate readings, light discussion would be sufficient. (Log, 11/20/81)

When commenting on changes in the classroom, Elliot showed he understood the paradoxical nature of change.

> It's hard to comment on changes because I don't think anybody has made, probably, any drastic changes. Yet you make a small change once or twice a minute. That was my response in a nutshell and maybe if there was an ongoing study and you were documenting things, you could comment on changes but nothing like that is happening.
> (Transcript, 11/4/81)

In addition, Elliot cited the paradox in his own participation on the action research team.

> You know, the very first graduate course I took was in Education. It was a course on change . . . so, I've gone through this before. And, so anyway, I took this particular course and I liked it, it was interesting stuff . . . I betray my expectations. (Transcript, 11/16/81)

As an example of his position at the Individualistic stage, Elliot demonstrated continued willingness and ability to reflect on his own thoughts and to change his mind based on new information and attitudes as he spoke on the outcome of the project:

> . . . this particular building . . . as a result of . . . budget cuts and the elimination of teaching positions, . . . has been shackled into the present structure and no alternatives have been offered. I assume people have complained, so if our basic mode of operation is deficient, its due to money or whatever superintendents want, then how are we going to say . . . we'd like to make a change without doing it, when it seems that all change is impossible because you don't have adequate number of staff . . ..
> (Transuript, 11/18/81)

John said that if they came up with something good in scheduling, that they could make changes and went on to give examples. Then Elliot agreed with John and said they could make a change like setting up scheduling, although Elliot originally called it a sort of mundane change (Documentation, 11/18/81).

Elliot exhibited an ability to see a lot of alternatives in a change process and, therefore, the need to be flexible. At one point, Elliot said maybe they could generate a list of alternative schedules and see what one looked best. The research assistant said that seemed to be different from the process he described before. He agreed, said maybe it was approaching the problem from two ends (Documentation, 12/16/81).

This need to be flexible is also evident as Elliot talked about his own classroom changes. In a meeting when the research assistant said it sounded like classroom changes didn't sound like planned changes, Elliot said he planned to be flexible (Documentation, 11/5/81).

In order to choose a change project, a teacher may need to see a specific change within the broader context. At the beginning of the team's discussion, Elliot didn't see scheduling as an overarching concept. John was able to argue convincingly for that broader picture of scheduling as encompassing many of the team's concerns. It is interesting to note that as soon as John had convinced Elliot of the value of researching scheduling, John went back to his earlier point of view that a simpler issue, time, was the key concern and priority. John seemed to be able to generate more adequate arguments when pressed or when he had an investment in an idea, and Elliot's initial perception of scheduling as a "mundane" change pressed John to a more complex argument.

For Elliot, seeing the action research within the broader context meant choosing a change project that was feasible. Also, because he was focusing on the "bigger picture," he did not see (at first) the possibility of investigating scheduling, which he perceived as a more mundane, immediate change. Because of a focus on the "big picture," Elliot also had trouble seeing the value of a smaller change effort, since he saw that they had little power to change the overall or big picture.

Later, Elliot showed his ability to change his mind as a result of this new information and arguments. Elliot said he began to see that scheduling is the "absolute problem," that it was "foolish" to do anything else, and they should do something with it. The ability to change one's mind and consider new alternatives when conflicting information threatens to upset one's stable system is a characteristic of the Individualistic stage. Elliot has this ability (John, at the Conscientious stage, who also had a stable system, did not, as described earlier).

Elliot's ability to see the complexity of the hierarchy of the school decision-making process and his feeling of lacking power in it had made him somewhat cynical about the possiblity of the research team's effect in substantially changing or impacting the school. At times, his comments sounded like Jack's at the Conventional stage, but there was a very clear difference in their meaning systems, and they both differed from Ted at the Self-Aware position. The different points of view illustrate the three developmental positions: Jack, who talked in lofty terms about personal satisfaction because it was "fantasy island" to think that administrative involvement could happen; Ted, who wanted to attack the power structure, get administration involved in whatever it was decided to do to make the impact felt, tell people what we were doing, and get them involved; and Elliot, who was being cynical about the possibility of anything substantial getting changed, yet became more and more involved in the research because it did deal with the way teachers felt about decision making and involvement in school processes.

8.2.2 Group Organization and Process

Interpersonal Understanding

Interpersonal understanding of the collaborative team's group organization and process for the first eight meetings was scored (Selman, 1977) in order to investigate whether teachers' developmental stage would be a good predictor of interpersonal understanding of the group process.

Table 18 indicates that there is some consistency between interpersonal understanding score and stage score of those teachers at the high and low scores, with more variability in the middle stages of development.

The findings discussed here are in response to the working hypothesis that a teacher's interpersonal stage affects the dynamics of collaborative research. All mention of group organization and process during the first eight meetings were excerpted and scored according to certain aspects of the group process (Tables 8 and 9 appearing in Section 4 are repeated here for ease in reference) and conceptions of group organization at Selman's (1980) stages of interpersonal development: stage 0) physicalistic organization, stage 1) unilateral relations, stage 2) bilateral partnerships, stage 3) homogeneous community, and stage 4) pluralistic organization.

An average score for interpersonal understanding was found by averaging the stage scores for all the individual responses.

Selman (1980) has found that the real-life situation generally constrains an individual's ability to utilize his or her full social cognitive capabilities. This research has found that the collaborative group context coupled with real life content in interpersonal problems increases the size of the discrepancy with reflective thought - and this is most true at the middle stages of interpersonal understanding, evidenced in the responses of John. Evidence exists in John's scoring, for example, that real-life content and natural discussion lower the level of interpersonal understanding as it was expressed in the semiannual reflective interviews about the topics of the action research group. [Note that neither standard hypothetical reflective interviews (dilemmas) or natural discussions about hypothetical topics were used in this study. Thus, they were not available for analysis in interpersonal understanding.]

The following pages present case histories of one team's teacher-researcher's perceptions and behavior in the action research team organization and process during the crucial first phase of the research project. The analysis presents each teacher's meaning system at different stages of development at a time when the individual's comments were less influenced by other members of the team.

Table 18

Stages of Interpersonal Understanding

	Ego Stage	Stage of Interpersonal Understanding** of Group Organization and Process			
	Pre-Test	Range of Scores	Highest Reliable Score	Average Issue Score	Global Stage Score
New Hampshire					
Jack	Conformist	1-2	2	1.27	1(2)
Ted	Self-Aware	2-4	3	3.08	3
John	Conscientious	0-4	4	2.42	2(3)
Brooks*	Conscientious				
	(log)	1-3	3	2.25	2(3)
	(mtg)	3-4	4	3.89	4
Elliot	Individualistic	4	4	4	4
Michigan					
Jim	Self-Aware	2-3	3	2.0	2
Lori	Self-Aware	2-4	4	2.92	3
Anne	Self-Aware	1-3	3	2.58	3(2)
Florence	Conscientious	2-3	3	2.8	3
Jane	Individualistic	3-4	4	3.08	3

*Brooks' log entries and comments in meetings scored very differently. Her unprobed log entries were scored lower than her thinking and acting in the team meetings. This may indicate her transition in development which is discussed in Sec. 8.2.2.

**See Tables 8 and 9 for description of these stages of interpersonal understanding regarding group organization and process.

Table 8

ISSUES OF INTERPERSONAL UNDERSTANDING RELATED TO CONCEPTS OF PEER GROUP ORGANIZATIONS

1. *Formation*: why (motives) and how (mechanisms) groups are formed; the ideal member

2. *Cohesion*: loyalty: group unity

3. *Conformity*: range and rationale

4. *Rules-Norms*: types of rules and reasons for them

5. *Decision Making*: setting goals, resolving problems, working together

6. *Leadership*: qualities, and function to the group

7. *Termination*: why groups break up or members are excluded

Selman, Robert L. *The growth of interpersonal understanding*. New York: Academic Press, 1980.

Selman, Robert L. *Assessing interpersonal understanding: An interview and scoring manual in five parts constructed by the Harvard-Judge Baker social reasoning project*, 1979.

Table 9

CONCEPTIONS OF PEER GROUP ORGANIZATION

Stage 0: The group as physicalistic organization

Stage 1: The group as unilateral relations
- Do what leader says
- To benefit one or another member
- No awareness of converging mentalistic "agreements" between members

Stage 2: The group as bilateral partnerships
- Concern for reciprocal or bilateral feelings of affection extended in an associative chain from one dyad to another (Sullivan's interlocking two groups)
- Person believes each member ought to form a dyadic friendship with every other member of the group ("everyone has to like each other")
- The person believes that members work together through a context. Specific exchange of favors ("partnerships," "teamwork") based on equal treatment and cooperation which simultaneously benefits all parties involved
- Recognition of the convergence of thoughts and interests ("agreements") among group members around specific group activities ("they should like the same things")
- However, the person is still unable to organize the group as a shared community, common to all members regardless of their specific relations to one another.

Stage 3: The group as a homogeneous community
- Increased concern with peer group relations
- Shift from the group as a series of associative relationships to each member's relation to a common whole
- Important concepts are: (1) recognizing the group as a social whole "work together as a unit" (2) held together as a shared community of common interests and beliefs in which there is a consensus of conventions and generalized expectations. "We decide on one thing everyone wants to do"
- Limitations are due to the equating of commuunity with homogeneity of values

Table 9 (continued)

- Inability to distinguish between role differentiation (e.g., leadership) and a lack of communal attitude
- A sense of obligation to the group is felt but generally in terms of pressures toward uniformity "you go along so you are not the odd ball"

Stage 4: The group as a *pluralistic organization*

- Three important organizational concepts emerge in the person's understanding of group dynamics
  - (1) A *sociological perspective* by which collective organizations are treated as multifaceted systems interdependent with individual differences "a group is a continuing process and it functions for members to coordinate their activities"
  - (2) A belief in a *pluralistic community* in which individual diversity is not suppressed but united behind common goals: "individual personalities of people different from each other will contribute to the group and make it more of an entity than it was before"
  - (3) A recognition of the need for *contractual* agreements as formal regulations for organizing this plurality: "rules serve as . . . some structure to the group"
- The person becomes aware of political decision making such as "compromise" which serves to integrate the diversity of interests in a pluralistic organization.

Selman, Robert L. *The growth of interpersonal understanding.* New York: Academic Press, 1980.

Selman, Robert L. *Assessing interpersonal understanding: An interview and scoring manual in five parts constructed by the Harvard-Judge Baker social reasoning project*, 1979.

JACK

Jack's average score was 1.27. His interpersonal stage score was between Stage 1 and Stage 2 with Stage 2 more dominant. His range of scores was 1-2 indicating consistency across issues and indicating his predominant thinking and acting in the unilateral and bilateral interpersonal stages.

Jack's responses indicated his conception of the group as a series of unilateral relations and/or bilateral partnerships (Stage 1 and 2). While some of the probed interview comments showed his conception of the group as bilateral partnerships and seemed to reflect Jack's capability level, other interview and transcript data were more consistent with Jack's operating behavior, primarily in terms of unilateral relations with other team members.

When he regarded the group's organization as that of bilateral partnerships, Jack considered the ideal member to be someone who treated others as equals (therefore, he was an ideal member if he saw himself as equal to others) and someone who could keep a secret.

> I'm trying to participate as a teacher and have them see me as a teacher, and I know those people well enough so if I sit here and talk about the office . . . they understand that I'm not going back down there and say to the office world . . . they say you did this or that.
> (Interview, 12/81)

Jack felt the group formed as people got to know each other and people saw what they could contribute. Jack emphasized dealing with group issues rather than individual "pet peeves" and having upfront judgment (thus he said what he meant but with few elaborated actions or expressed motives).

> As a member of a team, if there was a problem, I'm the type of person on a team who says, hey, we're off the subject, let's get on to the subject . . . I do not perceive of this as being a place where five teachers come to bitch about their pet peeve. I'm the type of person who will say, hey, let's get to the point, that may be important to you but you're off the subject of what we're really trying to do here for the school. If we solve the school's problem, our general problem, hopefully yours will be a small part of that, that will fall into place by solving the overall picture. That's how I perceive of me participating.
> (Interview, 12/81)

Jack's view of group unity consisted of people having good feelings about group activities and sharing their ideas with others. His perception of the group process as an external process led him to believe that the group would really be collaborating when they were talking to others.

Question: What kinds of things would show there was collaboration?

Response: I haven't seen people so enthusiastic that they are out talking with each other about the project . . . When that finally happens then I think we are well on our way . . . I don't find people . . . talking to other teachers . . . I'm not saying it hasn't happened, but I don't hear it and I think its, once we get to that point, people should be really excited about it, should be sharing some of the things we share, seeking information, advice from one another . . . (Interview, 12/81)

In his interview in December 1981, Jack would not assign roles to others and would not predict his own future contributions to the research process. This may reflect his wanting to be like others and not wanting to stand out. Because rules were not yet clear, it may also be that he couldn't state what he would do, how he would conduct himself, until he knew the rules. In unilateral relations, it is the rules that provide concrete and specific information on one's conduct.

Jack felt that group organization and decision making were based on knowing specific facts; the group won't be organized until all are clear on what they need to know and to do.

TED

Ted's average score was 3.08. His stage score was 3, suggesting that he saw the group as a homogeneous community. His range of scores was 2-4. A few of Ted's responses about group organization were scored at Stage 2, reciprocal or bilateral partnerships. All of his other responses indicated the group as a homogeneous community (Stage 3). At the minimal level, Ted perceived of group spirit as the group working together, with confidence that they would be able to produce. At this level, Ted's conceptions matched Jack's.

Ted reacted differently than Jack in that he saw an ideal member as someone who was faithful to the group as a whole, someone who was like everyone else in the group (Stage 3). He saw his role as contributing whatever he could to help the group (faithfulness). According to Ted's perspective, good group members all have the same concerns.

Question: What kinds of contributions do you see yourself making?

Response: I guess it all depends what we pick for a subject . . . but I guess I don't have an expertise in doing research, but I guess enthusiasm . . . I'll be glad to do whatever is required, to be a positive influence on the group.
(Interview, 10/81)

> Feel good about last week's meeting. Good people are on the team. All are concerned about improving the junior high. All were honest in telling about their frustrations with things at present. Morale has no place to go but up. Am sure all will do what they can to help the new principal. We have a golden opportunity to contribute by making action research a catalyst for improvement and change. (Log, 10/28/81)

Whereas Jack's loyalty was based in the reciprocal or bilateral partnerships he made with each individual in the group (groups of two's), Ted's was based on the concept of homogeneity of values. Ted saw loyalty and interpersonal relations as being based on common ground:

> I don't think anybody listening to the tapes, or notes or anything else could come to any other conclusion. I think we're all working as a team, sometimes I'm not so sure where we're going . . . but basically I don't see how anybody could say that this report was not a collaboration of everybody, teachers plus the other team leader . . . I don't think I would be on a team that wasn't that way, if somebody was leading the group for their own design or for their own ego thing, I don't think I'd come . . . (Interview, 12/81)

It is important to note that, given the above description of Ted's perception of group unity, when Ted did not commit totally to the research project focus it was easier for him to dismiss his argument with Brooks in Year 2 as the result of a personality clash rather than lack of task assumption and also to avoid taking on specific tasks to further the group research goal. It seems likely that he could not eventually commit to the project focus because he did not feel a personal commitment to the topic. His loyalty to the group did not carry him through because he was expecting homogeneity of values. That is the limitation of this stage of conception of group organization.

Ted believed in doing what was required of him in order to stay a part of the group. This capability-level belief seemed to be contradicted by Ted's operating level in the group. Although he felt a sense of obligation to the group, this was generally in terms of pressures toward uniformity. When his ideas clashed with others, he gave up his ideas, but he never really invested himself in the group goals either. He exhibited little formal obligation to the research task because he was unwilling to make decisions or accept the responsibilities that came with formal duties. Making controversial decisions makes one less conforming to the group, and this may explain Ted's unwillingness to carry through (in action) his objections to the research focus. Ted didn't buy into the common research goals so, on the operating level, he saw no reason to commit. (Thus, two interpretations of operating level are suggested to explain why Ted's thinking of the group as homogeneous community was not reflected in his action on the research task or the group work.)

Although Ted talked about taking votes as one possible alternative to group decision making, his goal was to have the group arrive at a consensus so that no one individual had to impose decisions on the group. This consensus of conventions and generalized expectations is characteristic of Stage 3, homogeneous community (see Group Process Report, Smulyan, 1983, Appendix C). Ted said:

> . . . maybe the idea of the agenda more in pulling us back together would stop some (wasting time) . . . we can also stop some by making some kind of a policy choice . . . there should be some kind of mechanism there (for saying) 'ok, listen, we've talked about this enough, have a vote or whatever everybody can agree on' . . . if we had some sort of policy on that . . . you wouldn't be the fall guy . . . or the one who has to make the tough choice, it would be easier for everyone.

Ted was very concerned with democratic procedures and principles from the standpoint of individual rights, social welfare, and due process. He talked about what should be done, but the actions were in conflict with his stated principles. He tried to avoid controversy and conflict (see specific examples in Group Process, Report I , sections on Conflict and Decision Making, Smulyan, 1983, Appendix C).

In decision making, he seemed unable to talk about a dilemma as competing claims about what was right; he talked as though he was right or that there was a 'should' that was right - a principle that was right, yet he questioned the purpose of specific rules. Further along in the interpersonal position than Jack (who also had strong perceptions of what was right but who reverted to dualistic thought), Ted allowed himself to include alternatives and contradictions in his questions. Jack did not.

Ted did not have predesigned courses of action, whereas John had formulas he applied readily to new situations. Ted questioned alternatives and often added complexity by bringing up perspectives which no one else had considered. He asked the whys? What if? What should be best? For Jack, Ted's questions were irrelevant. For John, Ted's questions provided a chance for him to state a formula solution that he used in action.

JOHN

In the first eight meetings, John's total scores ranged from Stage 0 to Stage 4 in interpersonal understanding. His average stage was between 2 and Stage 3 with 3 more dominant.

The inconsistency in scores was very different from Jack (Stage 2) and Elliot (Stage 4), both of whom were consistent in their responses.

John saw the group as a place for sharing personal feelings and problems and saw the group contributing to his solution of or dealing with those problems. He saw being a part of the group as being a part of a larger whole.

In operation, John also seemed to use the group (later in Year 1 and during Year 2) to gain access to the school administration; not quite seeking prestige but working for his own gain (see Group Process Reports, Smulyan, 1983, Appendix C).

A number of John's comments indicated a full range of Selman's interpersonal stages from 0 to 4. When pushed in a situation either by probing from the interviewer or by his wanting to influence others, John seemed to exhibit higher stages of interpersonal understanding. In the area of group cohesion/collaboration, he exhibited Stages 0, 2 and 3. At Stage 0, one quote seemed to indicate his view of cohesion as physical proximity. He also talked about the group as bilateral friendship and coordinated teamwork (Stage 2).

Question:	Can you give an example where you see collaboration working?
Response:	. . . I know with Brooks and myself because we're across the hall . . . we read each other's material and check into what we're doing and discuss some of the things, Jack and myself do, but not as frequently as probably possible, Elliot and I have sat down on a couple of occasions and discussed things . . . I never see Ted at all . . . that's where I see it (collaboration) is just in talking with people.

In another case, his view of collaboration was that of shared experiences (Stage 3). John perceived of group spirit as solidarity, shared feelings. He seemed to see group loyalty as each member helping the whole "all for one," but also saw the group as a total social organism in which individuals operate.

Question: Do you think there's collaboration?

Response: Yes, I think some of us have very definite ideas and opinions and we will express them, and some of us don't, and we will listen . . . I think that everyone that's in the group has kind of shifted some of their views as they have been going along listening to other people. One of the processes that I think is working, not as much as I probably would like it to, is we get together and discuss some of the points during the week as we see each other in the halls.

John seemed able to view the group needing the differences of individuals for its energy/growth (Stage 4), and yet there was a contradictory sense in which he acted on the prior conception of the group dependent on homogeneous values.

John's perceptions of the group process and his actions as a group member indicate his transition from Stage 3, the group as a homogeneous community, to Stage 4, the group as a pluralistic organization. For instance, John didn't see the team as a static group but as more dynamic and self-regulating (Stage 4). In interviews, John seemed unable to view the group as composed of a variety of subsystems, i.e., decision-making processes, which were needed to make the group a whole. He tended to see the group in a more singular dimension. In original meetings and interviews, he was unable to separate group processes, such as roles and decision making. John seemed unable to analyze the total process of the team in a variety of contexts: the group was seen as situation specific (Stage 3). John did not take the Stage 4 perspective of being able to see the group in comparison to others, using ideas such as leadership and conformity to distinguish and compare groups.

After the first eight weeks of the project, John was unwilling to identify roles for himself and others perhaps because he did not yet know the rules and norms associated with this group and with research in particular. He seemed more concerned about this than Jack, who was scored at the same stage on this issue, but who assumed the university researcher and research assistant would do the research. John, who seemed to operate generally at the subsequent Stage 3, assumed he would want to take on responsibility and ownership at some point, and he, in fact, did so.

BROOKS

There were distinct differences among Brooks' scores on interpersonal understanding in relation to group organization and process. Her log comments averaged Stage 2.25 and the global stage was Stage 3. Since the log was a self-designed document, comments made were not probed by an interviewer and thus Selman would suggest that scores from log comments may have reflected the minimal stage of interpersonal understanding. In contrast, it can be noted that Brooks' responses in probed interviews and in transcripts of group meetings averaged 3.89 and global stage was Stage 4. These later scores would reflect capability level and/or operating level since they were derived from probed interviews and/or observations and transcripts.

It seems that the group organization and process itself was enough of a problem or issue for Brooks to elicit her highest level of social problem solving; it is this level of social problem solving that underlies - but does not necessarily dominate - the person's social performance in any specified context. Brooks was conscientious, aware of other's perspectives in the group, and knowledgeable about and competent in different social contexts. She had more experience with groups than any other teacher on the team. Her interpersonal insights were, however, not always consistent with her actions in the group.

Brooks' log entries suggest that she saw the group as a series of bilateral relationships. Given this perspective, she believed that the interests of different team members must be coordinated in order to progress. In terms of group formation, Brooks talked about the importance of early meetings for getting to know one another (Stage 2) so that the the interests of different team members could be coordinated.

> Today's meeting accomplished much in terms of group members 'getting to know' each other better. Even though we all work in the same school and teach some of the same kids we meet as people and faculty very infrequently. Therefore, opinions are formed by other's comments and gossip. I feel this 'getting to know' each other is important for formulating our ground rules.
> (Log, 10/28/81)

While Brooks described part of her group spirit or identity as coming from a friendship with one other group member, she also talked about the evolving of a group identity which seemed to be based on shared experiences and feelings (Stages 2 and 3).

> Today's meeting helped pull some of my thoughts and feelings together. We seem to be just evolving a group identity. I still have problems trusting several group members. However, one member (John) is keeping me going. We decided to fulfill our commitment to the project in spite of our feelings of 'not knowing' what was going to happen. I find myself and other teachers a bit uneasy and confused when the answers or the questions are vague. One must understand the teacher's need to 'know.' (Log, 11/18/81)

Brooks' concerns about Jack's trustworthiness (voiced above and noted in the Conflict Section of the Group Process Report, Appendix C) was an expression of her feelings that loyalty in the group could be defined by expectations of trust and reliability:

> I've had an uneasy feeling since Wednesday afternoon when Jack volunteered to collate all the survey/interviews for the action research project. What's his reward? Can't quite figure out why he decided to 'give' of his time. There's a motive - perhaps information that would be useful in a 'power play' at an administrative level. I'm upset and worried about the confidentiality of the people I interviewed. I feel that I must protect them and their information from a possible 'backlash.' (Log, 1/23/82)

Brooks expressed her concern about general issues of trust and confidentiality in terms of group unity (Stage 3).

Question: What about your expectations of yourself . . . as a member of the team?

Response: Well, of the people that showed up for the meeting, there were a couple of people I'm close to and a couple of people who I don't trust. So I have some reservations. Could I work with them? How close can I be . . . because I've had some experiences with . . . I don't trust thing . . . if I shared with them, I don't want it to come back and get me, at another level. You know, if I'm honest enough to share and there are probably (will be) some observations that they might not share with me. I'm just concerned. (Interview, 9/81)

In terms of group formation, Brooks described the roles of herself and others in the group in terms of functions and responsibilities each assumed (Stage 4).

> . . . I see Jack as in . . . a leadership role, too, in terms of saying, 'Ok, now, let's get down to business, I really want to have a direction, you know, this is the study, and I want to have a direction (she snaps her fingers), this is the agenda, 'boom, boom, boom,' so I see him as a person getting us back on the track, and you know, some of us kind of let things drift a little bit. He will probably be the first one . . . to say, 'Well, let's get this firmed up.'
>
> . . . Ted just lives in his own world, but that's okay, we need somebody who lives in their own world sort of to temper the group . . . I see him perhaps questioning some of the things . . . that we're doing . . . and that's good to have a questioner in the group to sort of say, 'Well, I don't understand,' and really challenging you . . ..
>
> . . . I'm one of those people who . . . is responsible, if somebody needs something done they kind of turn to me and say, 'Ok, you know, you do it' . . . and as much as I complain and rant and rave . . . and get upset sometimes . . . I do meet deadlines. . .
>
> . . . I really like research, it's just like a puzzle to put together and it's exciting . . . so I see my role as the group goes on will probably be more . . . drawing on my experiences of . . . research . . .
>
> I'm trying to keep some of my comments based on the reading and research. So I guess my role, one of my roles in the group is to kind of focus in on the reading and things that we're doing . . . I feel the need, that I want to do that . .just for my personal satisfaction.
>
> (Interview, 12/81)

Brooks viewed the group as a pluralistic organization in which members stick together to achieve collective ends; she described group spirit as a process with a function and saw interpersonal relationships in the group as independent of the collective spirit (Stage 4).

> In terms of, you mean people sharing . . . I think you see most of us haven't worked that closely with each other . . . any group has to spend a month or two months really building trust and building who's who, and do I trust this person, do I really say what's on my mind .. . can I be frank with people . . .

> every group goes through that sort of . . . building a niche . . . I think that's gone on and I think now the group sort of feels that they come in and they have . . . a task to do . . . and we may not know where we're ending up, but we all sort of know we're in a process.
>
> . . . I guess some fears and concerns and things just need to be stated . . . do we really have a project to work on . . . is it feasible, what we have identified, as a problem . . .and, maybe some personality issues that have been problems. I know that some people in the group don't necessarily get along with me all the time, but that's ok . . . it doesn't bother me . . . I can work professionally with someone . . . without being super friendly with them . . . but I think that . . . there needs to be a certain degree of trust . . . (Interview, 12/81)

Brooks operated with Ted in the team meetings at a somewhat different level than these quotes indicate. While she talked about recognizing individual differences in the group and still being able to work together toward a common end, she exhibited intolerance of Ted's differences when he "shirked his responsibilities" and was at times unable to work with him. Stage 4 interpersonal understanding assumes that people can have different interests and still build a group process. Stage 3 assumes group solidarity dependent upon shared values. Many of Brooks' statements suggested Stage 4 but her actions with Ted suggested Stage 3-4 transition in interpersonal stage of development.

ELLIOT

Elliot's average score on all group process aspects was 4.0, indicating Stage 4 interpersonal development on the group organization issue. His responses were consistently scored at Stage 4 over all the aspects of the group process indicating consistent thinking and actions in his understanding of the group as a pluralistic organizaiton.

In terms of group formation and the ideal member, Elliot defined people's roles on the team in terms of the kinds of role functions they performed and responsibilities they assumed (Stage 4). In expressing expectations for himself as a team member, Elliot said:

> I don't know, I'm interested in which areas the team would choose to experiment in. My individual contributions, I guess, would be providing my own insight . . . I guess I would contribute, I guess I could try to fill ability voids, if there were any . . . (Interview, 9/81)

Question:	What do you see as role or responsibilities you're taking on and what about other team members?
Response:	I think that the team members tried to share information, especially where they had individual expertise, I did not perceive individuals taking lasting and specific roles. . . . on the other hand, during the discussion . . . I might notice a flaw in somebody's argument and some information that hasn't been brought forth and I try to insert those bits of information also.

(Interview, 12/81)

On the issue of group formation, Elliot recognized the group "superstructure," that is, he generalized about group operation and saw the group as a complex set of functions, each of which operated independently but all of which were directed toward balancing the group as a whole. He was able to abstract an overall atmosphere, climate or superstructure from the group, which formed the foundation for cooperative activity among members. Elliot saw the first few meetings as "initiations," which symbolized membership in the group and also served the function of building a greater sense of unity and identification with the group. He seemed to be taking a sociological perspective in offering a functional explanation for group processes in the first eight team meetings that had no apparent pragmatic function at all (Stage 4).

Elliot believed that the group allowed group members to fulfill basic human needs of attachment and identification.

> These sessions provide the participants the opportunity to speak their mind, get things off their chest, prevent 'burnout.' I'll bet many teacher centers use a similar format - at the least, they should. . . . our action research group should enjoy pleasant meaningful dialogue. At least, at last week's session, there were few inane comments . . . (Log, 10/27/81)

Elliot saw the group as a total social organism which was dynamic, not static (Stage 4) and saw a difference in group interaction when certain members were present.

> A note on the dynamics of our group. Due to absence we've met with four members several times (excluding university researcher and research assistant). I hope the research assistant has noted resulting differences in behavior.

4 members (present)	5 members (present)
babbling (including myself)	'measured' contributions
polite agreement, support	opinions of others likely to be questioned
pleasant and open	pleasant but tense

(Log, 11/20/8)

As part of this dynamic group process, Elliot saw interpersonal relations as independent of the collective spirit of the group. In this context, he saw that individuals can hold different opinions and that relations between the members need not always be harmonious because it is the collective spirit toward shared goals that keeps the group together.

Question: Did you know them ahead of time?

Response: . . . I knew all of them fairly well and I guess I shouldn't be surprised that things are going smoothly, and I'm not, it's just that . . . everybody seems to fill voids created by the other . . . kind of like we complete the jigsaw puzzle . . . the other interesting thing about this group is outside of these group sessions . . . Ted and I spend our free periods together, all the other people don't see too much of each other . . . they all like each other, there's no animosity, but each one goes their separate way. (Interview, 12/81)

Elliot saw the group sticking together to achieve collective ends; the group was a group because each person was willing to work with others to achieve group ends, despite personal differences. Loyalty was a personal commitment, a rational decision made by each person to carry out tasks which promoted the group goal. As opposed to the perception that groups exist in order to achieve shared feelings, Elliot felt that the group spirit is a process, like a tool, for unifying the group behind its overall group purpose.

Question: What's been accomplished in these first five-six meetings?

Response: Well, I think a basic element in this collaborative action research is that . . . it should accomplish whatever the participants want it to accomplish. Now it took us a while before people in the group . . . had a sense for that but now we do . . . so its like we're free to move on . . . in the beginning people sat around and wondered what they're supposed to be doing, and finally they realize they're supposed to be doing whatever they think they should be doing. (Interview, 12/81)

Elliot saw the group as a pluralistic organization in which a variety of points of view were not incompatible with a sense of community. Thus, a diversity of interests was tolerated and even welcomed and conformity was not necessary. The individual personalities contributed to the richness of the group as a whole (Stage 4).

Question:	Will that diversity be a plus or a minus?
Response:	I think it will be a plus . . . its not like there's five people who are a clique unto themselves who are doing this, its five people who belong to five different cliques . . . if each of these five cliques sees eight teachers, then we've hit almost all of the (staff). (Interview, 12/81)

Elliot saw the group as consciously agreeing on mechanisms for getting members to operate by the same general patterns. Thus, conformity was a conscious decision to act on agreed upon standards. Elliot felt that some kind of rules or organization were necessary to deal with individual competing interests so that individuals could rise above self-interest to collective goals (Stage 4).

> Two members of the group mentioned that they were pleased we've accomplished so much in terms of our actual research mission at the last session. I would anticipate that as group members become increasingly involved with research (concrete) activities, they will become less patient with general discussion. Considering the possiblity that this attitude does, in fact, develop, I suggest we decide if open discussion should be eliminated, limited or encouraged in our remaining sessions . . . perhaps a 15-30 minute time limit on school setting-general topics would be agreeable. (Log, 1/13/82)

8.2.3 Views of Authority: Group Leadership and University Professor

The issues of the collaborative research team's process lead to the teachers' perception of authority and leadership and the impact these perceptions have on the working of the team. In this study in particular, the teachers' views of the university researcher and the principal (Sec. 8.2.4) had a significant impact on the team process. For in-depth description of individual roles and leadership tasks undertaken by each team member, as well as the researcher's role, see ARCS: Report X, Part II, Appendix C.

JACK

Jack who scored at the Conformist ego stage and near the bilateral interpersonal stage tended to resort to arguments based on his authority, his knowledge and his control, which came from his position as part-time administrator in the school. Ted readily deferred to Jack's position (see excerpts under Part II in Report X, Appendix C).

Jack responded to members of the group as either people he needed to conform to or people over whom he should be the authority. Jack was able to cut Ted off effectively (Ted accepted it). Jack did not seem to do this with John and Brooks because he couldn't control John and Brooks the way he could Ted.

Jack conformed and changed his behavior to fit the situation (more typical of conventional morality). He may have done this to decrease his perceived authority but it also helped him to maintain his underlying authority based on his position in the school. He stressed his teacher perspective/role as a way of gaining trust of people in the group.

> I'm trying to participate as a teacher and have them see me as a teacher, and I know these people well enough so if I sit here and talk about the office . . . they understand that I'm not going back down there and say to the office world . . . they say that you did this or that.
>
> Yeah, I see me as adding a different perspective, but I also see that I have to be careful that I am seeing this perspective as a teacher and not a so-called administrator . . . I'm trying to participate as a teacher and have them see me as a teacher.
>
> (Interview, 12/81)

This strategy of presenting a teacher perspective in the group may reflect the conventional social perspective of putting himself in the other person's shoes (the concrete Golden Rule).

When did Jack use arguments based on authority? When did he choose to conform? He conformed when he saw the university researcher as "teacher:" suggested she collect and evaluate logs (Documentation, 10/21/81).

Jack saw the leadership of the university researcher and research assistant consisting of arbitration (facilitation) and organization of interests in the group. This compared to his description of other team members assuming leadership roles because they had more knowledge and expertise than others.

> . . . you (university researcher) and research assistant, up to this point, I have seen you as probably facilitators and leaders, but seen you slowly withdraw it, maybe a little bit hoping that the group would become a little more independent on their own . . . I don't think anybody out of the group has emerged as the leader of the group yet. . . . I would say so far probably all of us are a little reluctant to assume the leadership simply because I don't think anybody knows exactly where they're going . . .. After we identify the problem, I think there will be one, at least one out of the five, that will relate closer to that problem, and probably assume the leadership . . . this group is diversified enough that, if there was any resentment or objection, they wouldn't let that person emerge . . . as the leader.
>
> (Interview, 12/81)

Consistent with Jack's view of group leadership, he said the university researcher had to guide the group because she knew more.

> I think there's going to have to be an awful lot of help . . . I think you're going to hand guide this team in the actual doing of the processes and methods . . . by discovery, maybe, through questioning, not spoonfed, but I still don't see the team doing anything but fumbling as far as actually doing, knowing the processes and steps of the method.
>
> (Interview, 12/81)

Jack left the team after Year 1 to become a principal and in his final interview continued to stress the team's need for direction and leadership by the university researcher.

> The university researcher tried to play it democratic. . . . I think that as time went on, I think the two of you also realized that we weren't heading in a direction on our own very much. And I think you found . . . us asking to give us a little more direction, too. And assumed a position of saying, wouldn't this be a good direction to go in. After we had once asked for it.
>
> (Final Interview, 12/82)

Jack also challenged the university researcher's leadership. During a meeting in Year 1, Jack said he would meet Wednesday or Friday but not both, and that they were less likely to get other school staff to come after school. The university researcher said she would like to see both meetings happen. Jack said, "Both's not gonna happen with me." Ted said he didn't want this to be a "crisis." Jack said, "Well, I can meet Wednesday, you can, so we can all meet Wednesday" (Documentation, 1/27/82). Thus, Jack made a unilateral decision for the group just as he suggested a principal do when a decision needs to be made.

Jack also challenged the university researcher in later meetings in discussions about who would draft certain letters, what agenda items needed to be discussed, etc.

Jack's challenges tended to take the form of side comments, sarcasm, things that could be taken as jokes. When other issues came up, he would return to this testing of the university researcher. Sometimes he acted as though he won and sometimes as though the university researcher did; either way it was a win-lose situation.

TED

Ted who scored at the Self Aware ego stage believed the leader's role in this homogeneous group of the action reserach team was to keep the group together (marshalling solidarity) and on task. He attributed leadership to Jack as a result of

Jack's dominant position as an administrator and to the university researcher because of her higher status. This inconsistency between his thoughts about leadership and his actual attribution of leadership was reflected in the scoring on this issue in both the bilateral partnership and homogeneous community levels of group process.

Ted saw Jack as an authority because of his administrative position in school. Gradually, Ted came to respect John's knowledge about the school and his skill in dealing with people (e.g., superintendent, teachers who had to be interviewed). And Ted saw Elliot as an authority because of his knowledge and skills in writing and his skills in mathematics and use of the computer for analysis.

At the bilateral partnership level, Ted felt that the university researcher and the research assistant should take a directive role because of their greater knowledge (Interpersonal Stage 2). He also saw the university researcher as playing the role of group psychologist, using encouragement and friendliness to get people involved (Interpersonal Stage 3). He said:

> I think both of you . . . have been leading but . . . not in a dictatorship . . . I think you've been leading us in a way that has produced us to feel free to express our opinions and . . . to state our case without . . . feeling that . . . anything negative is going to come . . . probably the only negative thing is . . . that we fool around too much . . . we get off the subject . . . maybe just a little tighter rein is the only thing. (Interview, 12/81)

In interviews, Ted discussed leadership from a more comprehensive perspective, scored as the homogeneous community level (Interpersonal Stage 3) and can be called capability level. In talking about how he would like the university researcher to "rein in" the group, he said:

> . . . when I come in here I am tired . . . all of us are tired and we probably do try to avoid doing things . . . that would lead to an awful lot of extra work maybe . . . I just think that maybe sometimes we could advance faster in our way of doing things, maybe an agenda . . . maybe you could cut off the conversation . . . because we seem to, to talk things to death . . . (Interview, 1/82)

Ted saw the university researcher as an authority in terms of knowledge, i.e., the leader has more knowledge. This was viewed from a perspective of bilateral partnerships (Interpersonal Stage 2).

Ted's expectation was that the university researcher would be the "teacher:"

> At first, I didn't want to be in the project because I thought it was going to be the same type of thing. You would run the thing, and we would just sit here, and you were the university teacher and we were the junior high teacher, that we were going to have to agree to everything. But I'm glad to say I haven't found that so, I think all of us feel equal. (Interview, 12/81)

> The leaders have bent over backwards to give everybody a say in the process and maybe that's why we keep wandering around the bush . . . I think that in this course, because it was a teacher thing, we are going to make teachers do the research and this and that, and maybe it went too far the other way. There was nobody saying that let's work together. (Interview, 12/82)

He also asked certain kinds of questions - appealing to her authority in research:

> Is that possible though? I don't know very much about research. I mean all those things you gave us today about calling in outside help, visiting this, doing that - does that seem logical to you? (Interview, 1/82)

During the first year, he also perceived the university researcher as the group leader and final decision maker on issues affecting the whole group. When the university researcher asked what was the procedure for checking out substitutes for a May meeting with the principal, Ted said the university researcher should do it as leader of the group. She said she could but she preferred someone in the group doing it (Documentation, 3/31/82).

Also, when the university researcher asked about the issue of replacing Jack on the team, Ted said she would know better than the team about the needs of the research. The university resarcher said they needed to weigh what there was to do with the issues involved in getting a new person (Documentation, 9/22/82).

In the second year, Ted said they may only let one person go to American Educational Research Association (AERA) meeting in Montreal. He said to the university researcher, "We've all worked on the program together - what will you do if they tell you only one of us can go?" The university researcher said she would bring it back to the team (Documentation, 1/26/83).

JOHN

At the Conscientious ego stage, John saw the leader as a catalyst, helping to energize rather than direct, marshalling group solidarity as a whole (Interpersonal Stage 3).

> . . . to me it seems that university researcher is kind of the person who tosses out the ideas or tosses out the things to get us stimulated to say something, to start with.
>
> (Interview, 12/81)

Many of John's responses in the group process leadership issue were unscorable, often because he talked about descriptions of concrete events and goals rather than reactions to these events. Also, many of his responses were in the form of formulas and predetermined courses of action which tended toward simple prescriptions.

John perceived the university researcher as teacher, especially at the beginning of Year 1. There were many indications that he took his cues from the university researcher. At various meetings, he would ask questions like, "So what would you like us to start on, talking about these quesions?" (Documentation, 10/21/81) or "Now, on our problem identification, do you want each of us to give our thoughts?" (Documentation, 12/2/82). He would also look for signals from her such as whether or not the meeting was over. At one meeting, for example, John said, "Okay?" The university researcher said, "Yes," and John got up to leave (Documentation, 12/1/82).

John also perceived the researcher as an authority in research and asked questions on research design, issues of sampling, validity. He also showed the university researcher and research assistant what he had done with strands for the timeline and asked the university researcher to add to it.

John's perceptions of the university researcher were like Ted's in content in that they saw the researcher as teacher and as research authority. John, however, was different from Ted in his view of the university researcher as group leader. Ted was consistent about what the university researcher _should_ have done and what he _would_ have had her do in that role, i.e., be the final decision maker on issues affecting the whole group and hold a tighter rein.

John, however, believed that the group leader should have stayed out and let teachers develop ownership (as the university researcher did, in his eyes). But if he had it to do again, he would, at times when the group was dragging, have had the university researcher as leader bring the group to a decision. He didn't want her to make the decision, but to save time and keep the group moving along faster, he would have had the university researcher make the group come up with a decision.

> As a group of teachers, it was best we had to do it this way, because if it's going to be valuable to us as individuals, not just valuable because we have a paper done and a few recommendations . . . that's secondary to the whole thing from my personal point of view.
> (Interview, 12/82)

> I think she has been more or less the organizer to see that we've met and had stuff there, that we've got stuff done if we said we were going to get it done. She's been the leader in that fashion. It's sort of leading by pushing rather than leading by being in front. I think that's the way the university researcher has led us, by pushing us slowly and steadily towards our goal, which is okay. (Interview, 6/83)

> I think there was, in the first year, a mistake made in not getting us organized a little bit quicker into what we were doing. I think we dragged on too long and then . . . to make a lot of hasty, fast decisions . . . I think that it should have been at least pointed out that we've got to start to make some decisions earlier than they were . . . Now, maybe it was the only way it could happen, but I think that this should have happened earlier and maybe that could have been the focus from the research people to say, okay, guys, this is it, you're going to need to come up with something for now. . . . you don't have to tell us what it is but (tell us to) come up with something that can happen.
> (Interview, 6/83)

BROOKS

Brooks' dominant stage of interpersonal understanding in relation to the leadership of the group represented a transition from Interpersonal Stage 3 (homogeneous) to Stage 4 (pluralistic). Brooks exhibited a capability to understand the group leadership as a variable in the group, depending on members' differing interests and their ability to take on multiple roles (Stage 4). This paralleled her ability to see the collaborative group process issues from a Stage 4 perspective discussed earlier (8.3.2). Brooks scored at the Conscientious ego stage.

In a log comment about group leadership, Brooks suggested that the university researcher should take the role of arbitrator, organizing interests within the group and promoting group solidarity.

> I think that my past working relationship with the university researcher . . . has eased my reservations about the group's composition from the very beginning. I feel confident that she can handle any situation that might come up. It could get 'STICKY.' We discussed addressing the issue of confidentiality of our data collection next Wednesday. I hope its not too late. (Log, 1/23/81)

Brooks didn't want the university researcher/research assistant to tell the group (impose) what should be done but fell just short of saying that they might take on multiple roles and present the group with a number of possible perspectives.

Question:	What kind of expectations do you have for the university researcher and research assistant?
Response:	I guess that if we get off the track . . . I would hope that . . . think there's still a question in my mind, and I know in some other people's minds . . . 'do we really know what we're going to be doing?' and I guess that 'no, we really don't' and maybe you (research assistant) and the university researcher can talk about it . . . (Interview, 12/81)

Brooks was consistent throughout the project in stating her initial perspective that the team looked to the university researcher for leadership and direction, and that the initial frustration gave way to understanding of the need for the group to develop ownership. She (in the second year) saw the university researcher as a colleague, a member of the group who has specific roles just as other members do. This was similar to the Stage 3 interpersonal understanding of the homogeneous quality of not wanting to single one person out.

> At the beginning, I know we wanted her to be director and we wanted her to be leader . . .

> I think she is more of a facilitator sometimes, but also kind of an equal . . . I don't think we are looking to her for answers. I think we are looking amongst ouselves for that kind of information network, working with it.
> (Interview, 12/82)

At the end of the project in a presentation given by the team to a university class, Brooks said the more researchers tried to control the group, the less successful the group was. She saw examples of this at an AERA conference she attended but did not feel it had happened in her team. She said the team was frustrated on the one hand because they expected the university researcher to come in and be the leader but that establishing group leadership was an important process. She said it was frustrating at first, and they put pressure on the university researcher to take more leadership but after she looked back and saw why it was done that way, she felt it was successful (Documentation, 4/20/83).

In her final interview, Brooks gave a perception of the university researcher taking on multiple roles in the leadership and workings of the team. The two examples below illustrate Brooks' transition position. At times, she emphasized the equality issues (Interpersonal Stage 3) and at other times she emphasized her perception that the university researcher carried out a variety of roles (Interpersonal Stage 4).

> You became a colleague, as an equal and it didn't seem that you had any differences in terms of status in the group than anyone else . . . Just because you were there didn't mean that . . . your ideas were . . . more important than anyone else's. (Interview, 6/83)

> I felt at the beginning that you were holding back from leading and really keeping yourself in check in terms of being the focus person in the group. As the group became stronger, it looked like you were more aware that you . . . did have a place in terms of being a member of the group rather than being the leader. As the research group went on, your role . . . sometimes it was directing, sometimes it was okay . . . we need to do this and this just from the standpoint that this is the timeline; these are the nuts and bolts of the research . . . but the content of the meeting, more or less, was our input.
> (Interview, 6/83)

Despite the fact that Brooks saw the role the university researcher took as the best possible one, she, like Ted and John, thought that the university researcher might have done something more. For Brooks, the "more" was teaching research, not taking on a more directive role in pacing the group (John) or making final decisions for the group (Ted).

> . . . Because I think that teachers need to be educated in what research is . . . I think in order to have research be successful, maybe having, you know, an intensive one or two day workshop on research . . . I think that that's really essential within the first month or two. And then people can say wait a minute, I don't want to have anything to do with this or this isn't what I expected . . . Then later on people would have been able to say, oh, okay, this is what we're supposed to be doing and it wouldn't have taken so long maybe for us to decide what the research was that we were going to do, and the question. (Interview, 6/83)

ELLIOT

Elliot's capability level and operating level were consistently scored at Interpersonal Stage 4 (pluralistic) in the group process analysis. He saw the group as a pluralistic organization in which individual diversity was not suppressed by being united behind common goals. His view of group leadership was consistent with that perspective. He saw group members taking on varying leadership roles, depending on their differing interests and their ability to take on multiple roles to meet the needs of the group as time went on and tasks and focus changed. Elliot scored at the Individualistic ego stage.

Elliot, more than any other teacher on the action research team, was able to separate the individual and/or status of the individual from the functions that he believed the group leaders should perform in the group.

> . . . at this point, I'd like to see you (the university researcher) become more actively involved in the discussion more often . . . I think that, the tendency of the group members to perceive you as the ultimate leader had diminished to the point that the give-and-take can be more free . . . (Interview, 12/81)

Early on, Elliot assigned tasks to the university researcher and research assistant - seeing them as responsible for particular role functions in the group process. This was consistent with his concept of the formation and working of the group as a group of individuals working together to achieve a common goal.

> Well, the group has met and nearly overcome the first obstacle, selecting a research topic. Next we must plan our research. I hope the research assistant and the university researcher have concrete guiding suggestions in this regard. An approach assigning group members to read and report on various secondary sources would be appropriate . . . (makes other suggestions).
> (Interview, 12/82)

Elliot continued to suggest tasks during the later phases of the project. For example, Elliot said he'd like to pass the ball to the university researcher or research assistant - have them edit the questionnaire and get it typed up - as the team was designing a questionnaire early in January 1982 (Documentation, 1/16/82). Another example occurred in January 1983, when the university researcher said she would be happy to do any any kind of talking to people necessary to help the members get release time for American Educational Research Association convention. Elliot asked the university researcher to put together a package for each of them that had the letter of acceptance (from AERA) and an explanation of the proposal for the symposium that was accepted so they could give it to the principal (Documentation, 1/26/83).

Not all of Elliot's suggestions for assignment of tasks were accepted. For instance, as the team was organizing plans for its final data analysis, Elliot said he thought the university researcher and the research assistant should write the findings in the conclusion section of the final report. He said we need somebody to pick out trends and significant findings based on the analysis of the information. In this case, the university researcher said she was willing to run tests and to see which HSS scores related to the School Survey. She also said the team had done a lot of work on the School Survey together in the group, so she was reluctant to write the conclusions in that section by herself (Documentation, 2/9/83).

Not only did Elliot assign tasks to the university researcher and research assistant, he also supported and reinforced the work that they did. For example, in the final interview, Elliot commented that "the way that the researcher and the research assistant reworked the final report into a better format and did quite a bit of editing to finish up putting that report together was terrific." (Interview, 6/83)

All team members seemed to come into the group with the initial expectation that the university person would be the teacher in this "course." Elliot was no exception, although he expressed his perception of the university researcher as teacher differently from others. He used his expectation as a way to build on the common goals of the group in the first eight team meetings.

Although he didn't carry the "teacher" expectation through the project as others did, Elliot seemed consistent throughout the project in valuing the role the university researcher took as facilitator rather than director. As pointed out in the previous section on leadership in a group process, Elliot saw the leader as having many possible roles which helped to serve group ends in a complex group system; the university researcher was only one leader, although others also take on leadership roles, himself included.

> Related to the group process, I would say that we used the university researcher to set boundaries as we proceeded. In other words, we'd ask, 'Can we do this, should we do that?' and she'd supply the answer.
>
> Aside from your (university researcher) recent occasional effort to stay on task, direct the group to stay on task and get done what we had to do as time was becoming an issue I don't think so. I think - it was my perception that you limited your role to doing what was asked, doing what was asked that you felt you should do.
>
> If nothing else, at least the five teacher researchers needed to have feelings of involvement and strong-armed or even coercive . . . leadership in those early times might have been comforting to the teachers, but they needed to feel involved. And I'm sure that such a technique would have gotten them to the point at Year 1 1/2 and even they could have said, 'Hey, this wasn't my idea' . . . and . . . sit back and let these guys decide what they want to do.
>
> (Interview, 6/83)

Elliot defined group leadership as including multiple functions which could be performed by a number of individuals in the group. He felt that each leadership role functioned to complete the complex system and serve group ends. He perceived that more than one kind of leader existed, in terms of specific group functions (task leader, emotional leader), rather than stereotyping perceptions of different leaders ("president," "teacher"), which would characterize lower stage thinking. Elliot could see himself and others taking on this leadership task:

> I guess most of our discussion . . . has been helping the group members understand the . . . inner workings of the school . . . and whenever an aspect of that came up that one or another group member was especially familiar with then that group member would somewhat take charge of that phase of the discussion.
> (Interview, 12/81)

> . . . sometimes I become impatient, and especially if people are redundant, and if so, I would tend to try to summarize the discussion or to clarify it in such a way as to conclude the discussion . . . and from time to time I guess different group members would do that depending on who thinks . . . at that moment can summarize the best for the whole . . .
> (Interview, 12/81)

8.2.4 Authority: Principal

The findings discussed here are in response to the working hypothesis that the teacher's developmental position influences his/her perception of the role of the principal as it is related to the context of the school and the process of collaborative research.

The principal who agreed to the ARCS involvement at the junior high school left the school in October the first year of the project. The incoming principal was a prior classroom teacher at the school but not a member of the ARCS team. He took office in November of the first year. The ARCS team decided not to invite the new principal to join the team as a member because they felt that the introduction of a new member at that time (three months into the project) would strain the working relationships and trust that had developed. In addition, one member of the team, Jack, was a part-time administrator, and the team felt he could be an effective liaison with the new principal. Jack, however, left the team after Year 1 to assume a principalship in a different school.

The university investigator interviewed the new principal and it was felt that he was clearly taking steps to differentiate and establish his new position. It seemed that the new principal was trying to listen to teachers and to be open to them in ways the former principal was perceived not to have been. This attitude, however, conflicted with his perception of what it meant to be a principal, which included attitudes such as "you make the decisions," "you can't please everyone," "if only half the teachers agree with me that's good enough." It was clear that the principal in the the first year was trying to maintain a feeling that he still belonged to the comaraderie of teachers; by the second year, however, he moved to a position more distant from the teachers and that created problems for teachers who were taking his reactions at face value and were not able to see the inconsistencies and contradictions in his decisions.

In Year 1, the action research team drafted a Staff Opinion Survey (SOS) to get all teachers' and school staff's opinions about what problems needed to be researched. The team showed the draft to the new principal for editing and additions in December. His response was that the timing of the survey was appropriate since he had needed the information anyway. This response set up the expectation that the team's research would be taken to the board and used to help the principal negotiate changes with the school board. In January, the principal read the SOS results, but when he approached the school board, he used them only to support decisions he had already made before seeing the report. Teachers on the team reacted differently to this sequence of events. For instance, Elliot anticipated the principal's lack of action as far as putting forward the teacher's complete range of responses to the school board. At first, Brooks and John took the principal's reactions at face value and had high expectations for his use of the team's research. Although Jack was expected to be the team's liaison to the principal, John became the member who kept the principal informed about the team's research in Year 1. In his final interview, Elliot suggested, however, that the principal did not listen to John. It was not known what relationship Jack had with the new principal.

At the end of Year 1 Brooks and John interviewed the principal for his definitions and goals for the school. It was this interview that began the process of changing their perception concerning the principal's commitment to the team's research.

At the beginning of Year 2 a list of organizational changes made by the principal from Year 1 to Year 2 was compiled by the team and taken to the principal for any additions or changes. The principal was continued to be perceived as taking a positive attitude toward the team's research during Year 2 and willingly supported the teacher's request for release time to attend conferences related to their collaborative action research.

During Year 2 when team members were analyzing their results and drafting their final report, they began to question whether the principal would sincerely take into consideration their findings and recommendations. In late spring the team made their recommendations and presented a draft to the principal for his reactions. Soon after this, the team presented a colloquium at the university with Education faculty which the principal had indicated he would attend but did not and did not give reasons for his lack of attendance. The principal was then asked to come to a meeting of the team at which questions about the use of the team's findings were asked, but he gave no clear indication as to how he would use the results. By the time the recommendations were presented at a special school staff meeting, it was clear the principal was not seriously considering making use of the results.

In a final interview with the principal by the university investigator, he stated:

> I think looking at the people on the team, they're the type that want to be involved so it was good for them to be able to have something that elaborate, not just a committee that ends up with four meetings and comes up with a recommendation for the principal. But they're the type of people that really want to be involved in Education. They're not the type that want to work 8 'til 2:30 and that's it. So I think it was good for them. If, for no one else in

> the building, I think it was good for those people to have something that they could be involved in.
>
> Its really hard to say . . . I don't think they've changed but I guess maybe if they didn't have something to be involved in, then you would have seen a change. I don't know if there may have been something else they may have been involved in if this had not been available. I think then you might have seen a change. Because people who want to be involved need to be involved, and it there's nothing to be involved with, that's when . . . a person becomes bored, that shows up in all aspects of their life, their job, their family life, and everything . . . Possibly if this had not been available, then we might have seen a change. But I think we saw them working the same ways they had always worked as far as being involved in Education, in educational research, and educational questions. So I really can't say I saw a big change in them. It's just that they continue to be involved people as they always have been.

Whereas the principal appeared to feel the team research was valuable, he also clearly suggests that it was necessary to keep these particular teachers occupied.

JACK

The principal did not seem to affect Jack's role as classroom teacher and was not an authority figure for Jack. Authority was not an issue for Jack because he regarded "himself" as an authority figure as part-time administrator with 17 years of experience in the school. During the first eight meetings, Jack said little about the principal. The new principal was not a dilemma for Jack, although Jack's relationship with the principal was never made clear. Instead, he defined the effects of a new principal on a specific issue - morale - which created no conflict at all for himself. At one team meeting, Jack said he'd been through four principal changes. When Brooks asked him how he felt about it, Jack said:

> The principal hasn't changed the way I teach in my classroom for 16 years and hasn't affected me personally per se as a classroom teacher but has affected the overall philosophy of the school, which I think is where the morale problem exists . . . now. (Transcript, 10/28/81)

John and Brooks together saw the principal hiring as a problem for the staff, not a dilemma, although Brooks had reacted to it in her journal as a dilemma for herself (Documentation, 10/28/81).

Jack felt that many things were out of the principal's hands.

> . . . Many times we blame the principal or administrator for things that are out of their hands . . . the interim principal has tried . . .
> (Transcript, 10/28/81)

He then said that it was a mistake for principals to ask teachers for their opinions and then do the opposite - that it would be better to just tell teachers what you were going to do in the first place. This was an opposite response to that of Ted who said the principal should get teachers' opinions even if he will not use them in making the decision.

Jack left the team after Year 1.

TED

Ted's hopes for the principal follow from his idea that people should band together and cooperate.

On the new principal's appointment, Ted noted:

> It is hoped by everyone that a new spirit of cooperation will invade the junior high school corridors. (Log, 12/16/81)

Ted, like Brooks and John, at first expected more positive changes from the new principal.

> Very little change has taken place since he became the new principal at PJHS. Meetings are being held with each department on next year's budget and a survey is being conducted involving department heads vs. house coordinators. The word is no big changes until the next school year. (Log, 1/12/82)

In terms of the principal's relation to teachers, Ted expressed a need for involvement by teachers even if only for face value. This was a different perspective than Jack's, who said the principal should just make the decision. At one point, Ted said that the process of principals asking teachers' opinions was just done to cover themselves, and that principals should ask opinions of those around them, even if they won't use them in decisions.

Ted seemed to use this same thinking in deciding whether to invite the principal to be more involved in the action research team. He said the team should invite the principal, although "we still don't have to use his ideas." He did not want the team's work to be dominated by the principal's ideas.

Ted often posed questions, using "should" and "could." He seemed to be appealing to a more adequate system of thinking, not limited by reality but based on principle. He was concerned with rights and ideals, a concern more typical of the conscientious thinker, but he expressed these in very global terms, thus suggesting his transition position between the Conformist and Conscientious stages.

Ted also referred to a democratic system of decision making and expressed concern for moral problems and obligations. Again, the word "should" as a moral imperative was always present in his statements and arguments. Typical of Ted's statements was when he said that when he was a principal that he had more communication with higher administration. He said that people should be able to band together, that somehow problems should be solved (Documentation, 10/28/81).

Ted observed that the former junior high principal had little effect on change, that he was just a middleman implementing policies dictated from above and below him. The principal, Ted acknowledged, seemed to have some influence on morale. Ted's perception that committees were in the forefront of setting policy was very different from Jack who believed the principal set policy and from Brooks and John who believed teachers have little input into policy at the school. Once again, Ted's conventional stage and global principles on democratic policy making may have been the lens through which he perceived the school.

> In my short time at the junior high, the principal seems to have little effect on change. Teachers (committees) were in the front when it came to setting policy. Information seems to flow upward and downward to the principal. A different type of principal could use his position to become a more forceable advocate for change. (Log, 11/4/81)

It is not surprising that three teachers in the same school with the same principal all described to be "interested, active participators" by the principal should have such different perspectives of the same events, if one considers the developmental position of each teacher. Typically in other models of psychology, it is assumed that different people see the same thing in different ways (so this idea is not new). We then go on to look at personal characteristics between people (age, years of experience teaching, experience with prior principals, etc.) to try to explain their differing perceptions of the same event. In cognitive developmental theory, however, one begins to notice that the same physical event can, in fact, be seen differently by those affected. Not only do they explain their perceptions of the event differently, they seem to have "seen" different realities. Thus, the persons are constructing reality out of very different meaning systems of logic and in a psychological sense different "objects . . . events" do exist as well.

What is the logic system out of which Ted sees that teachers committees have an effect on policy in the school, while Jack, Brooks, John and Elliot all see little effect there? Could these other teachers influence Ted, by telling him something different? By pointing out their perceptions? For two years in this project, the other members of the team pointed out their realities to Ted over and over, either in a friendly, chiding way, teaching way or frustrated tone; never did Ted swerve from his own reality. It would take a developmental transformation for Ted to see the principals, teachers and school policy making in a different way. Part of what may be needed is Ted's willingness and confidence to take on responsibility and risk involvement in taking action on the principles he espoused.

In the discussion of whether and how to involve the principal in the project, Ted's concern with the ideal, what's right, was again reflected in his desire to do what he thought was best regardless of the administration. John asked a question on the choice of scheduling as a researchable problem, i.e., what should be done in the school's schedule may be different from what could be done in the real school situation. Ted held to the "should" idea that a schedule that reflected what "should" be done ultimately should be the one defended to the principal, and the team should stand behind the findings. Even though Ted called himself "practical," he seemed not to want to recognize the context of the school as a system. Although he may see the complexity in the system or the broader social context, his words do not reflect this perception.

In this discussion on principal involvement, Ted used questions as his way of entering the conversation. He questioned in a global way the strategies that John suggested would fit the project into the system of the school. Because of Ted's global questioning of what John perceived as the clearcut rules and regulations of the school as an effective working system, John called Ted an idealist. In previous and later conversations, John, at the subsequent Conscientious ego position, often provided Ted with the patterns and the formulas he used to deal with the system. Ted seemed to appreciate both John's greater knowledge of the workings of the school as a system and his willingness to actually work in the system, i.e., talk to administrators, superintendents, school board members.

JOHN

John said the principal runs the school - and is at best a benevolent dictator. He implied that teachers need to figure out ways of staying out of the principal's way. Because John was confident of his control of his own self system in the school, he didn't want to add conflicting perceptions to that control.

> Log entry entitled "Essay on Principals:"
>
> I have never worked for a bad principal. Some I have not agreed with, but all were working to help students and teachers . . .
>
> A principal runs a school; he can choose others to assist, but final decisions rest with him. The big problem some have is not being able to diplomatically gather information to make the final decision. Many times feelings are hurt and teachers will not assist in the process because they think their ideas and time are requested but then ignored . . .
>
> (Log, 11/81)

> Essay titled "Picking a New Principal:"
> (See decision making for more from this entry.)
>
> A school is not a democracy nor is it a republic. Under the best of times it is benevolent dictatorship with a few safeguards built into the system. A principal evaluates teachers. They should not hold their position because the ones they evaluate selected them.
>
> (Log, 11/81)

John, at the Conscientious stage, resorted to the use of his own formulas and predesigned courses of action in response to solving problems. This tendency to use formulas that show simplicity is more typical of the middle range of moral development scores, the Conformist and Conscientious stages (Patterson, 1981). In one discussion on school context John said that having had a lot of different principals, he had come up with four ideas: 1) if you do not send students out of your room, you are not bothered by principals;

2) if parents or students don't complain you are left alone; 3) if you don't complain no one bothers you; 4) if you give the appearance of order everyone leaves you alone (Log, 11/81). Basically they were a simplified formula to getting the principal to leave the teacher alone. Jack said that they were "four very good observations" that would also make a teacher be called a good teacher on their evaluation (Documentation, 11/4/81). The area of evaluation was the only area in which John felt the principal affected him. He developed this predesigned solution to remain unaffected by the principal. It also meant he was in control of his own system in the school.

John conformed to his own role expectation of the job, the school organization, and the principal. John seemed to be embedded in the context and the teacher role in the school and acted on his beliefs, being consistent in what he said should be done and what he would have done. His ideas of what should be done were therefore pragmatic and based on what he had done before and represent the conventional stages of moral judgment. John rarely expressed a "should" at a Post-Conventional stage. His own moral code seemed tied to his internal system. He acted more from what is: 1) pragmatic or strategic and 2) socially desirable or expected, than 3) what is most fair or just. John tended to change behavior to conform to the situation to do what would be the "right thing in the situation," primarily defined by his own system orientation in the job and school. Thus, he tended to be somewhat inconsistent with what he may have earlier felt should have been done.

John's expectations about the system were reflected in his conversations with Jack. John perceived of Jack as the insider and himself as the outsider on school context issues. This was less an indication of reflection and more the accuracy of being an outsider to administrative decisions. An example of that behavior is as follows. Jack said that after the past six school days, the new principal was not sure he wanted the job. He described a series of incidents with kids - of having to carry them out of the building, fighting, bus seats slashed, parent conferences. John saw himself "As someone who is way outside observing," and he thought that the trouble was due to having no definite direction from the main office. Jack said that there was more direction out of the office in the past few months than in the past few years. John suggested that maybe as far as kids and teachers were concerned, they don't see it, but he thought it was there (Documentation, 12/2/81). John listens to Jack, accepts that Jack may have a different view, but does not defer to Jack as Ted does. John kept his own ideas and spoke with confidence, perhaps to the extreme of rigidity when others dialogued.

John seemed to see the principal as part of a larger system, yet John's thinking often resorted to formulas. This may account for John's seemingly contradictory statements. For instance, John said that a lot would depend on the new principal but that "money was really the whole key" (Documentation, 10/21/81).

Throughout John's comments there was the contradictory idea that the principal makes a difference but doesn't. John started with a more complex idea and then reverted to a simplistic formula.

In his later comments about the principal, John expressed the feeling that not much would change. He almost convinced Brooks, at the same Conscientious stage, of this also. She verbally agreed with him, but in her personal comments in her log, she expressed much more expectation for positive change as a result of the new principal. Certainly there is an interaction here between stages of development with age or years of experience. John had 17 years of experience, Brooks only 8. Brooks deferred to his experience, but, in private, she held greater expectations. John was firmly entrenched in the Conscientious stage, with confidence in his own working system and little dependency on the principal, as long as "he leaves me alone." Brooks, in transition, had expectations of the principal to satisfy her needs for reinforcement, affiliation, and psychic understanding. Her expectations almost became demands as she saw herself being engulfed in an almost uncontrollable system. Until she gained the sense of personal control of herself within the system, Brooks continued to have high expectations of the principal for external reinforcement and valuing.

In relation to the ARCS project, John actively took on the role of providing the principal with information on the project during Year 1. This fit with his belief that one should let the principal know and, if the principal is interested, he will make the next move.

> John said that the new principal was hoping we would come up with some ideas - that he was really interested in what we could offer (Documentation, 12/16/81).

> Our principal is quite interested in what we are doing, very interested from talking to him and some of our ideas, he would really like to see what we come up with. Because that's the first thing that he has to do now, is sit down and deal with scheduling for next year, immediately . . . And then in the future, if we come up with anything or ideas that could be better, he would certainly like to go through them.
> (Transcript, 12/16/81)

During Year 2, John no longer continued in his voluntary capacity of updating the principal on the team's progress and it became clearer to the team that the principal was not as interested in the team's research and results as first anticipated.

BROOKS

According to Brooks, the principal controlled change vis-a-vis a number of staff schedule budget allocations, the tone of interpersonal relations, and the level of involvement. She felt the principal had formal and informal power to create or control change.

> . . . the principal, I feel, controls the elements of change. Whatever you think the change is can be transmitted formally by what the principal chooses to share with staff or informally by what he or she doesn't choose to share and by what the staff sees as decisions that the principal may or may not have been influential in or may or may not have been in control of. So there's a formal and an informal change process that I see. (Transcript, 10/28/81)

Later Brooks agreed with Elliot that the principal triggers change rather than controls change. Elliot may not necessarily have been reacting to the reality of this situation but more as a statement of how a principal should ideally initiate change. After this meeting, she used the word "triggers" in her journal when describing the principal's role in school change.

> The principal triggers the elements of change - number of staff in areas, schedule, budget allocations, tone of interpersonal relations, level of academic involvement. This can be transmitted formally by what the principal shares with his staff or informally by what the staff 'sees' as decisions that the principal is able to influence or make. (Log, 11/3/81)

There were four primary issues which described Brooks' perceptions as the team members debated the issues involved in the choice of a new principal.

The first issue concerned the relations between teachers and the former principal and Brooks' perception that teachers could create change as they did with the Teacher Corps program. At an early meeting in Year 1, Brooks brought up the new point that when Teacher Corps was going on, all teachers were so busy developing their own projects that they would go down and tell the former principal that he couldn't do this or that because it would conflict with what they were going to do. Once Teacher Corps stopped, however, she noted that the principal started making decisions in which teachers were not involved (Documentation, 10/21/81).

The second issue concerned Brooks' reflection on her own and others' reactions to the choosing of a new principal. Brooks had the ability to reflect on herself and her surroundings. She tended to assume that most others were doing what she was doing (i.e., thinking about what happened and reflecting on how they feel). Jack tended not to reflect on his thoughts; rather he acted or reacted. She noted that difference in a positive way from the point of view of someone who can get caught up in thinking and thinking over an issue and who perhaps longs for the more simple world where endless reflection is not a possibility. Specifically, in Phase 1, Brooks described Jack as one step ahead of most teachers in looking forward not back on the principal issue, because most teachers were still thinking about what had happened and how they felt about it (Documentation, 10/28/81).

The third issue concerned Brooks' expectations for change with the new principal. There was a contradiction in that she had very low expectations since she thought things would not change, but, on the other hand, she held very high expectations that the new principal would help her personally. Even though Brooks agreed later with John when he said he did not hold high expectations for change with a new principal, her later log comments contradicted this and suggested her very high hopes for improvement and her willingness to discuss these improvements with the new principal.

Brooks admired John's confident sense of the school context and how he maintained control of his own self system within the larger system of the school. Thus, she was persuaded by John's low expectations of the new principal, even though they contradicted her own very high personal expectations. This inconsistency is not atypical for a person at the Conscientious stage of development. As she agreed with John, she said:

> Some people are going a little bit overboard and saying yeah, it's great, the new principal's going to be the answer to all our problems but we're (John and Brooks) sitting back saying, well, ah, the fact that they're kind of acting and saying that this is the way it's going to be does not necessarily mean that he's going to corroborate the feelings, and so I think there

> are going to be a number of people who will be either cooled off or will be grumbling about all . . . it's going to be interesting how he handles the situation. I wouldn't want to be in that situation. I wish him all the luck in the world. There are so many unhappy people in this building I don't know how things are going to work out.
> (Transcript, 81)

On the other hand, she said that choosing a principal was the "biggest thing we've done" in the six years she had been there.

> . . . getting a new principal for this school is the most important thing we've been through together in a long, long time. This is my sixth year teaching and this is the most serious thing we have all confronted. That's even considering Teacher Corps.
> (Transcript, 10/28/81)

> I know some things that I hope will change: morale more positive; schedule, reorganization to include me with a team of academic teachers, more positive relationship with administrators in this building, adequate guidance counselor coverage for girls and problem kids. How will the new principal affect me? The biggest change will be my attitude. I hope I will be able to support the new principal. I have hopes that 'things' (problems common to all faculty) will change for the better. (Log, 10/25/81)

Brooks talked about feeling stressed personally and professionally and her high hopes that the principal would help.

> . . . the school's not helping me deal with it. In fact, its creating more stress and I'm sort of looking at the principal as coming to the school and helping that situation and I'm really unrealistic about it. I know that I really shouldn't think that the principal is going to be able to bail the school out and create a less stressful situation but that's my high hopes . . . (Transcript, 10/28/81)

The fourth issue concerned Brooks' use of the principal to support her own personal issues. In Year 2, Brooks talked to the principal about the morale issue and when he told her it was one of his goals, too, she came back to the team revitalized in her feelings and supported by him.

> One of the principal's goals [discussed during an a.m. (before school) informal group meeting] is to get the teachers to care about the school, to participate in after-school activities, improve morale in general. He feels this is a priority. Also, curriculum needs to be clarified. Other concerns are on the 'back burner' at this time.
> (Log, 2/2/82)

Brooks also talked with the new principal about other problems and concerns she had. His response to her made her feel his support in the sense that he was backing her up.

> I discussed my concerns with him about kids who were uncontrollable among the general faculty. He was in complete agreement. In fact, he had drafted a thank you note to me and several other teachers who helped during the 'boxing match.' Nice touch. I'm beginning to see the new principal's style and to see his ideas. So far, I'm impressed. I think that it is to his advantage he knows what its like to be a classroom teacher. (Log, 2/2/82)

During Year 1, Brooks cited an article which suggested that the team's project needed to be sanctioned by the principal for it to work.

> . . . what I'm talking about is that particular issue . . . whatever we do has to have . . . be sanctioned by a principal or a head of the school or some, some . . . (interrupted by Elliot or Ted asking why it needed to be sanctioned) well, if you read this article . . . it says . . . you should involve the principal . . . (Transcript, 11/18/81)

Having been active in school staff member duties before, and having tried to make changes, Brooks recognized the value of the principal's backing of the team's research idea if it was going to work. Brooks referred to the article on school change several times. Brooks used her outside readings as authorities to discuss or back up her ideas. She conscientiously read the articles brought to the meeting by the university researcher and she sought out additional articles. At the Conscientious stage, she felt skillful and confident through reading professional journals.

Brooks shared her findings from readings with the principal as well. At another time, she talked about articles she had located on materials on Project Adolescence.

> And I told the principal about it and he is going to look over the materials over vacation, and we'll get together and talk about it. (Transcript, 12/16/81)

Brooks' comments about the project needing to be sanctioned by the principal seemed to reflect her understanding from the readings and her experience that the principal is the key person in the school. She had always been active in the school, taking her duties as a teacher in the classroom and staff member in the school as strong responsibilities upon which she acted. Cordial, if not friendly. relations with him were sufficient for her to maintain her own stable working classroom. Early on in the project, Brooks was still somewhat dependent on mutuality with the new principal. The more she sensed this new principal was approving her actions and offering reinforcement, the more she felt like she was doing a good job and she tried harder. This external approval from the principal. however, was not her total life support in the school. Brooks was in transition, moving beyond this interpersonal. Self Aware stage of development, which was so dependent on external approval for one's motivation to work harder. The principal had a place in her own stabilizing self system. As the project continued into Year 2, Brooks' idealism about expectations of mutuality with the principal diminished and began to be replaced by her own self-definitions, her own authority and her own personal achievements in her own definition of her role. The principal could then be seen as a like-minded thinker or a foe, but she maintained control over her own self system.

At the end of the project, Brooks linked her well-being to her investment in her work and commitment to teach according to her own principles rather than external evaluation. She became more confident of her ability to set personal standards and began relying on herself as the primary source of her evaluation. Thus, in the terms used by Kegan (1982), her well-being was linked to the smooth running of her own system. her own institution.

The confidence and skills she gained in the project, plus her deeper appreciation for individual differences, the contributions of team members, and the principal and his job in the school and district, seem to have helped her define her own self system more clearly in terms of the reality of the school context and decision making.

ELLIOT

Elliot saw the principal as someone who should organize a group of teachers, taking into consideration the teacher's point of view. This was consistent with Elliot's idea of a leader as someone who should help a group reach a common goal.

In a log comment in Year 1, Elliot suggested that the proper posture for a principal was that he knows what is wrong and doesn't permit it. The school should function on the basis of what is right. The 'rightness' equates roughly with what is 'best.' He then noted that "best" should not be determined unilaterally and that total staff collaboration must determine the "best" system of functions for the total school.

According to Elliot, the principal should know what is wrong and not permit it by total school collaboration to determine what is best. The principal should act on what is best for the school, but, in Elliot's experience, the principals have acted arbitrarily, rigidly, by paying lip service, by not considering alternatives to their preferred decisions. This seemed to match John's perception of past principals as "benevolent dictators."

Elliot saw the principal within a larger context or system. Given this viewpoint, he perceived the principal's voice as one of many to be considered and his changes as only one set of those that occur in the school. Elliot said that in order to understand change, one has to understand formal and informal channels of power.

> Ted asked how they would get away from the prior principal's problem of soliciting input and then not using it. Elliot said maybe a majority of teachers would say one thing, research another, and the principal another, but at least it would all be out in the open. 'These people have to know we have no authority' (Documentation, 12/16/81).

In a discussion on the principal's role in making change, Elliot said that he would change Brooks' idea of "the principal controls change" to "the principal triggers change."

Jack said the principal pulls the trigger. John said that how teachers are evaluated has changed and that it is never constant. Teachers don't know what to expect (Documentation, 11/5/81).

Elliot, Jack and John each seemed to speak from their own frame of reference. The difference between Elliot and Jack's perception was striking. Elliot, at the Invididualistic stage, said that ideally the principal "triggers," facilitates, and organizes individuals around common goals, while Jack, at the Conventional stage, said the principal autocratically "pulls the trigger" and orders unilateral change. Brooks, at the Conscientious stage, was confident of her teaching skills; she was assertive, active in the school, yet least confident of her role in decision making in the school. Thus, she said the principal controls change. Yet, almost immediately upon hearing Elliot's comment, she recognized the adequacy of the idea of "triggers" change. John, who felt least controlled and least concerned with the principal in relation to his own changes, focused on the teacher evaluation issue perhaps because it was the only area in which he felt the principal had an affect on him.

Because Elliot saw the principal as only one part of a larger system, as was the action research group, the system needed to be considered in weighing whether or not to invite the principal to join the group. Group cohesion also needed to be considered. The principal could be seen as a resource rather than a deciding or controlling force (this paralleled Elliot's view of the principal triggering rather than controlling change).

Elliot expressed this view of the principal and the relation to the research project during a team meeting in November 1981. During this conversation, Ted, at the Self-Aware position, said it was valuable to invite the principal in to give the team ideas, although it would be the team's decision on a project in the end. Thus, Ted thought the team should invite the principal before it decided on a research focus. Ted's desire to invite the principal. even if for face value alone, concerned his wish that the project be given a good chance so it would not be filed away or rejected. It also paralleled his view that, on school decisions, the principal ought to get teachers' opinions for face value alone, even if he did not intend to use their ideas.

John, at the Conscientious position, was less concerned with the final product of the project, and said that if it were used, that would be good, but that it was not necessary for his feeling of success. He saw the skills he was learning and the interaction he was having on the action research team and with other teachers in the school as important to his own professional career. His concern with inviting the principal depended more on who the new principal would be because that would determine whether and how to involve the principal.

Elliot, at the Individualistic stage, was concerned about the action research team's group process and said that the principal should have been involved from day one if he was going to be included as an equal voice on the team. Elliot expressed his opinion that the action research process was complicated enough already without bringing in another person after the team had been meeting for 4-5 weeks. He also said he had needed this long just to find out where everyone in the team was coming from. Since Elliot considered the principal as one who could offer another opinion, he said the team might look at the principal as a "valuable resource" (but not a full team member), whom the team could call on at certain points in the research process. This paralleled Elliot's perception that the team, in its diversity, already had valuable resources and the principal would add one more set of opinions which would weigh equally with those of other team members. While John suggested different strategies depending on who the new principal would be, to Elliot, the strategy of working with the principal no matter who it was would be the same as with any other person on the team (i.e., when Jack left the team, Elliot used this same reasoning to suggest another person could not, at that late date, become an equal team member).

In his log just after this discussion in Year 1, Elliot mentioned objections toward the principal joining the group and noted the time it would take to make him a "true" group member. He wrote, "the idea of granting 'equal' stature to an outsider into a group that has spent 4-5 sessions of hard work getting acquainted, solely because of his organizational position, is an idea I find very objectionable" (Log, 11/20/81). Thus, Elliot strongly objects to bringing the principal in as a participant in the group.

In addition, Elliot talked about the need to identify status in the hierarchy in making a decision about what to research. This was compared to Brooks who wanted to choose a classroom project that would not be undermined by administrators. Elliot said you need to consider the hierarchy in ways in which it wouldn't control you.

> I just think that we very carefully pick something we like and that could be carried with or without the participation of the principal . . . You know, leave the principal down there and we can stay here and we can file a report with the principal afterwards . . . (Transcript, 11/18/81)

Involvement of the principal in the project was a conflict for Elliot. On this issue Elliot's determination not to be controlled by the principal seemed at times to overshadow his perception that the principal should act as a resource to the team. Elliot was perhaps in a dilemma that he recognized more clearly later in the project. The one issue which was still unresolved for Elliot at the end of the project was the principal's involvement.

Elliot, at the Individualistic stage of development, was very consistent in his understanding and actions in terms of the team's work and group process, all aimed toward meshing individual diversity and conflict to achieve common goals.

In terms of his relation to the principal of the school, however, it seemed Elliot was unable to act with the principal in a way that would contribute to the group's goal. As far as we know, Elliot never discussed the project with the principal. At the end of Year 1, Elliot took a job in the high school, and thus, during Year 2, he had no contact with the junior high principal. It is impossible to predict what would have happened in the project had Elliot stayed at the junior high school. Would he have become aware of the possibility of "compromising with the principal" to help bring about the changes the team's research suggested were necessary? Would he have been able to act personally on his belief that the principal should be a resource to the team?

Views of Authority: Superintendent

In discussing cooperation from the superintendent, in addition to the principal, the five teachers responded quite differently, each from their own perspective. Brooks said they needed to clarify their framework - referring to the article - that the research should be classroom based, so that it was not undermined by administrators. Elliot said that the team had to identify its status in the hierarchy and that it shouldn't tackle anything that it couldn't follow through. Ted said he thought we should try to get cooperation from the superintendent. Brooks said the superintendent would say: "Let us know if there's anything we can do to help." Ted said that just something in the classroom didn't seem good. Elliot said the superintendent would say "anything we can do to help" if it was a classroom project, but that if it was bigger, he'd say it was a nice idea but you can't do it. John said he disagreed, that if it was a good idea that the superintendent would back you (Documentation, 11/18/81).

These comments suggest the different notions of the role of authority in their lives. Ted, at the Self-Aware position, is idealistic and willing to try; however, we note that even though he sat on a committee regularly with the assistant superintendent, Ted did not act on his thoughts. He did not bring up the ARCS group nor did he follow up even after John started his series of conversations with the assistant superintendent or made his presentation about ARCS to the Staff Development Committee. John, at the Conscientious position, also wanted cooperation from the superintendent. Ted said the team should try to get cooperation from the superintendent. Only John, however, followed through on this concept. John kept the assistant superintendent informed throughout the second year of the project. This led to John's invited presentation to the Staff Development Committee, which the assistant superintendent chaired, and of which Ted was a member.

Brooks, also at the Conscientious stage, was willing to opt for a classroom project and thus sidestep the issue of principal or superintendent involvement. She had had little positive experience in the decision-making hierarchy in the school or district compared to John. She said authorities in the district would say: 'Let us know if there's anything we can do to help,' but, in fact, she believed they would not do anything to help.

Elliot, at the Individualistic position, agreed with Brooks about not involving the administration, but his argument was based on perceived status in the hierarchy (they won't help you, they will ignore you) combined with his own sense of commitment to see the project through without interference that could slow down the group process or control the "teachers" research process. On this issue, Elliot perhaps failed to see the paradox of the ramifications of leaving the principal out of the group process.

These perceptions of the superintendent were quite different from teacher to teacher but consistent with each teacher's view of the principal.

8.3 Goals/Outcomes

Persons at different developmental positions may be expected to have different perspectives on their goals and outcomes of the research project.

The purpose of this section is to relate members' goals and perceived outcomes and some of the ways they set out to reach those outcomes.

Comparison of Team Members' Initial Goals for Project

Although all team members talked about wanting to do a project that benefited teachers and students in the school in some way, each expressed their hopes in a different way.

Jack talked about the particular benefit for himself ("Well, just participating and sitting and talking with other people, getting other ideas, there have to be benefits . . . to yourself. Even if they are accidental there have to be benefits"). As pointed out in the section on group process, Jack emphasized the personal value of participating in the project, although he saw benefit to the school as well. When talking about outcomes or goals for the team's project during the first eight team meetings, Jack also suggested that team members should do the project for personal satisfaction, since it was "fantasy island" to think that the administration would get involved and support the team's effort.

Ted, at the Self-Aware stage, stressed fulfilling the needs of others (teachers and students) in the school as a goal for the project, rather than the personal gains he would get from it. He also wanted to do a project "that all of us have deep caring for," expressing his awareness of the possibility of internal/emotional connections to the project, although he continued to do so in vague or global terms. Both of these ideas reflected his Conformist/Conscientious transition, in which caring for others and wanting to work on a project in which group members share feelings of commitment and caring are important. Despite his stated beliefs at the beginning of the project, Ted seemed unable to fulfill actual duties defined during the action research project which would allow him to reach these goals. His contributions to the group tended to be "enthusiasm" because he felt he lacked skills necessary to contribute in more concrete ways. Skills included communicating with other teachers, reading research articles, writing, analyzing data, speaking at presentations. His lack of confidence in these areas was also reflective of the Self-Aware stage and influenced his participation (or lack of participation) in the group tasks. Ted experienced a conflict between his unwillingness to take on tasks and his desire to live up to what was expected of him by the team.

Jim, Lori, and Anne on the Michigan team all scored at the Self-Aware ego level.

Jim scored at the Self-Aware stage but his initial goals for the action research project emphasized career goals and growth which would benefit him, his students and the school as a whole "I hope it would make me a better person to make decisions not only about my own class but about the school and what influence I can have here." Although Lori, too, saw the project as furthering her professional career, like Ted, she expressed vague, global goals of solving school problems. Anne, too, sees the value of the project in it providing an opportunity to work on "some problem I might want to attack this year." She also sees the project as a way of getting people in touch with what's going on. She, too, tends to use global, vague descriptions, like Ted. Jim and Lori's focus on the career aspect also stems from their position in the age 30 crisis. Their inability to be specific, however, is similar to Ted and Anne.

John, at the Conscientious stage, emphasized his assumption that the project would solve school problems, "dealing with students and dealing with teachers within our particular area - trying to find help with the problems." While Ted focused on doing a project that addressed people's needs, John wanted to solve problems within the school as a system. Unlike Ted, John felt skillful in his ability to address problems and assume tasks which led to problem solutions. He felt confident in his ability to approach and talk to other teachers, principal, assistant superintendent, and school board members. He was comfortable directing the team as it carried out data collection and analysis. Even though he originally felt he lacked research skills, he continually found ways to bring the skills he had into the working of the team. This approach was very different from Ted's, who did not initiate tasks or try to compensate for skills he felt he lacked. John could clearly list his own strengths, weaknesses, and perceived outcomes from the project. Ted was more vague in identifying skills he had or lacked and what he gained from the project.

In order to solve the problems he saw as the team's goal, John tended to find and use formulas, seeking the rules or laws which governed behavior and interaction in the system. While this allowed him to work on the problems identified by the group and move the team along, it prevented him from looking at alternatives or subtleties in the problem situations.

Florence scored at the Conscientious position. The value of the project for her was to "be able to handle things better" although she feels she's doing a good job now. "Maybe I want the chance to find out for myself that I'm really doing things the right way." Her comments reflect her internal sense of competence and achievement which characterize this stage. She feels stable, like John, of her own self system in the school and classroom. While John makes this same kind of statement at the end of the project, Florence is able to articulate it as a goal at the outset. She never specifically says how the project will benefit the school and at most seems to suggest the experiences of individual teachers on the team will create a ripple effect which will therefore affect students and the school.

Brooks also scored at the Conscientious stage but her goals for the team were to "establish a dialogue within the school - of some concerned teachers, of what's happened to us, where we've been, what has really transpired." Her concern for communication may be a sex difference that appears at this stage; women are often scored lower because their concern for communication comes across as caring for others, a characteristic of the Conformist stage. Her concern for others was expressed in an active, specific way; i.e., it is through communication that caring would take place rather than in a more global and passive way as expressed by Ted. Like John, Brooks felt confident talking to other teachers in the school and taking on other project tasks. More than John, she seemed to understand other people's viewpoints, which seemed to be one aspect of her emphasis on communication and may also be another sex difference at this stage.

Jane, scoring at the Individualistic level, indicated goals for the action research project in terms of redefining her work in conjunction with a deeper understanding of herself. She was concerned with being recognized for contributions and achievement in roles she valued and said, "I want to be the best teacher there is. I'm pretty good already." She had a stable professional self and was pleased with her abilities and accomplishments, "I feel I have accomplished important things and expect to continue. I feel no pressure or panic about the finiteness of it all." In the project she indicated concern that teachers, herself included, are "losing sight of the kids because time and production have become so important." Jane consistently brought the student perspective to the team at the Michigan site. She also presented diverse opinions often different from other team members. She was also concerned about becoming more her own person with "autonomy and harmony" and less dependent on colleagues, spouse, critics or mentors; she says, "I've been dependent too long." Jane's goals for the project included renewal in her teaching and gaining a newer perspective on herself.

Jane left the Michigan team after the first year. Although she said she left the team because her perspective was represented by others, the documentation of the first year of the project indicates that her perspective on school, classroom, and teaching/learning issues was quite different from others on the team. She seemed to be an outsider to the rest of the team in many respects. In addition to her having been a prior elementary school teacher and thus having different experience from the other team members, the other four had been good friends and team teachers for some time.

Jane's developmental test scores were similar to Elliot's in the New Hampshire team. Analysis of her interpersonal understanding scores suggests, however, that Jane, unlike Elliot, viewed the group as a homogeneous community, wherein all good group members have the same concerns. This view regards loyalty to the group and interpersonal relations as being based on common ground (homogeneity of values). It is suggested that when Jane's views continued to be different from the rest of the group, she had to make a choice. Ted, in the New Hampshire group, with the same interpersonal understanding scores (stage 3), but at the Self-Aware stage of development, could stay on the team, without being totally committed to the project. Jane, however, at the Individualistic level seemed unable to stay on the team without being totally committed to the project. Had she been able to view the group from a pluralistic perspective (stage 4 interpersonal understanding) as Elliot did in the New Hampshire group, she may have been able to remain on the team and find a successful compromise which would have enabled her to use and enhance her skills.

Elliot, at the Individualistic stage, discussed project goals in terms of benefits for himself in professional/career growth. While Jack talked in general ways about individual benefits occurring (even accidentally), Elliot saw a particular, specific benefit to himself - the project will "ideally motivate thought and greater precision in . . . an advanced position." In fact, at the end of the project, Elliot talked about using skills and processes learned in follow-up activities. For instance, he would like to be the researcher on a different collaborative research team: "I have an interest in supervision and an interest in the process of change and I would like to become involved as a project leader or research assistant or something . . . on a foreign turf where there is a change process, where an action research model is utilized and where the principal or whoever is involved in the team, and analyze the group process and be able to write on the actual results of whatever decisions were made" (Interview, 6/83).

Elliot felt skillful in approaching the individual and group goals set by the action research team. He said he derived pleasure from such activities and felt he could make significant contributions. He was able to keep his own needs and goals in mind while fulfilling obligations to the group (e.g., doing computer programs and data analysis contributed to his needs to learn more for a course he was teaching while also contributing to the group's goals and needs). Teaching a statistics course allowed him to bring information back to the team to help them clarify goals. This contrasted with Brooks' difficulty in maintaining her obligation to the team without submerging her growing sense of individuality and her needs to address personal issues. She almost needed to dichtomize the two, so her sense of responsibility wouldn't overtake her emerging focus on personal needs within the system in which she was engaged, and feel conflict. Elliot was able to integrate his individual needs and the demands of the group. Elliot was able to stand back from the system at all times, whereas John's values and actions were embedded in this system, and Brooks was struggling to differentiate her values and perceptions from those of the system.

Even though Elliot's goals were individualistic, he had a sense of obligation to the group, a feeling of contractual commitment which influenced his acceptance and volunteering to carry out team tasks. He talked about being "flexible" in the group, so that even when he made objections or questioned the research project, he said he did so to enhance the overall system and project, not to "obstruct" it (as Ted felt he would) or cause it to break down.

In comparison to John's use of formula solutions to problems, Elliot was able to generate alternatives, project consequences, and to accept conflicting points of view, seeing when they were equally valid.

Like Brooks, Elliot was able to stand back from the team and analyze the team's process and individual contributions to its collective goals. Brooks got caught up in interpersonal conflicts, but Elliot was able to accept individual differences which may have resulted in conflict and to work with/around them toward mutually defined goals.

Comparison of Team Members' Perceptions of Project Outcomes

These perceptions come primarily from final interviews, in which teachers talked about the value of the project to themselves and to the school. This section does not include Jack because he left the project at the end of Year 1 to become a principal in a different school system and Jane who left the Michigan team at the end of Year 2. The comparison of project outcomes is made for the remaining eight teachers on the two teams.

Just as Ted's initial goals for the project were vague and global, so were his perceptions of project outcomes. He was unable to specify, even when probed by the interviewer, what he would take from the project, although his general feeling was that the process was beneficial for teachers as a whole. A positive outcome of the project for Ted was a global sense that "teachers can do research" and that "research is no longer scary." Because he expected that team members would care about the project and that the project would meet the needs of teachers and students in the school, he saw the project itself as not reaching its initial goals. He saw it instead as valuable "only for a limited number of people," and not something that would "affect most of the teachers in the junior high and in their own classroom."

Despite his feelings that these goals should have been reached (a project that would "affect teachers in their classrooms") Ted was unable to do what was necessary to ensure that the team would reach them. Because Ted felt that the project did not work to meet his initial goals, he felt justified or could rationalize not participating throughout. Ted chose to avoid conflict that might have occurred had he tried to integrate his goals into the group's project. In the Self-Aware (Conventional) stage of development, needs for group acceptance supercede individual needs. Although Ted felt that certain aspects of the project should be followed up, he admitted that he would not be the one to do it. Once again, this showed the inconsistency between what he thought should happen and what he was willing to do.

Like Ted, both Jim and Lori at the Self-Aware stage, question the immediate impact of the project in school. Jim talks about the value of the project in terms of providing "some enlightenment in terms of scheduling" for the school. Lori said, "I'm not quite sure that our topic, the area we zeroed in on, the scheduling, is going to make that much difference." In contrast to Ted, who was unable to take away any positive concrete outcomes for himself in the school, both Jim and Lori emphasized the value of collaborative action research as a model for staff development. Lori said,

> I think being introduced to action research as a process has been the most valuable part of the project for me. In fact, as I look back at the work that we've done and the topics we've discussed . . . the fact that we have been able to work within the model made all the difference. Because I see how valuable the model is and see, too, how the model can be used in so many different situations.

The difference between Ted's and Jim and Lori's perceptions of final outcomes is not surprising given Jim and Lori's commitment to and involvement in the project which contrasts Ted's inability or unwillingness to assume responsibility for tasks on the team. This may also reflect Jim and Lori's movement in this dimension to the Conscientious stage and Ted's seeming lack of transition.

Jim's ability to recognize the individual growth in other members of the team as a result of the participation in the action research process is also reflective of the Self-Aware to Conscientious stage transition.

> It was exciting to see people . . . really use some skills that they have and have built . . . by just working together.

Although this is still fairly vague, Jim is suggesting his awareness of individuality. Lori's pessimism and disappointment at the end of the project (like Ted's) stemmed from her feeling that the team's recommendations were not specific enough. This caused the conflict with Jim despite the fact that both were vague in their statement of goals. She wanted to be more specific and Jim wanted to retain his global perspective. This could be interpreted as the result of sex differences within the same Self-Aware stage. Lori wants to work within her specific context in the school taking into consideration the details and elements of that context while Jim is content to work with a more abstract system of goals. Gilligan (1982) points out that women tend to be context specific in their decision making and men tend to rely more on abstract principles.

Like Ted, Anne tends to describe the outcomes of the project in terms of what she hopes will come out of it rather than focusing on any specific changes the team did or did not accomplish. Anne, however, was optimistic, while Ted was pessimistic, perhaps because she has been given a role by the principal in helping the staff next year to utilize the action research process in addressing school or classroom problems which individual teachers might want to investigate. Anne's perceptions of outcomes also paralleled John's and Betty's feeling that their experience on the action research team has led them to feel that they are doing things right. She says, "This was a project that really helped me feel that I had some valuable things that I'm doing in the classroom, different ways that I really could contribute." Thus, for both John and Anne the consolidation of their self system seems to have been a result of their experiences on the action research team. Both started out questioning the value of their own contributions to the action research process and ended up recognizing their own skills and being recognized by others on the team for the skills they were able to contribute. For instance, Lori says of Anne the first year that "she tended to think that she didn't have much to offer, that her experiences were very limited and she didn't know how to do one thing or another yet I think she became a much more active member of the group the second year than she was the first year." Jim describes her more active role as "I think Anne was always the starter, a good spark plug, in the group.

She was always sort of 'let's get going, let's get it done . . .' I saw Anne taking leadership parts in that group many times in the course of the year." The principal has designated Anne to take on an additional leadership role in the school next year (described earlier) and further reinforcement of Anne's capabilities and achievements may encourage her transition to the Conscientious stage. Despite her nervousness about assuming the leadership role next year. She has gained self-confidence in her abilities in the school and this confidence is needed before one can make the transition to the Conscientious stage.

John's perceptions of the outcomes varied from personal growth (confidence, skills, expertise) to the use of action research in future school practice. He was able to articulate each of these outcomes very clearly as opposed to Ted, who was unable to recognize or list these outcomes. In the classroom, John felt he was more "conscious of what he was doing" and felt that what he was doing in the classroom and the project was "right." Participating in the project "revitalized" John so that he was out in the school and system talking to teachers, administrators, district personnel, and school board members. Revitalization also took the form of initiating and leading a school committee to revise the student pass system and joining the systemwide Staff Development Committee. Despite his perceived revitalization, formula solutions and a somewhat rigid focus on his needs to keep his system stable continued to influence his behavior. For instance, John reacted negatively to the principal's recent proposal to bring 6th graders into the junior high because "it has always been a seventh and eighth grade school."

Another value John saw in the project was the use of logs to vent his anger by writing his frustrations down. He said this helped him "channel the anger and frustration and get it out of the classroom." John felt he would use some of the skills he gained from the project, specifically using a process of documentation timelines to summarize student work on a writing project for parents and other teachers. He also hoped to capitalize on his increased confidence in writing by working on a paper on a teacher's view of action research and possibly present that somewhere. He emphasized the value of the process the group went through and planned to use it for his own future staff development and to modify it (to action inquiry) for use with science colleagues or other teachers. It appears that John will actually carry out some or all of these projects. John was confident about the work he did in the project and its usefulness to him in the future; "I know what I'm doing is right after listening, watching and seeing." Consistent with the Conscientious stage, John defined the value of the project in terms of his position in his system of the classroom and the school.

Another outcome for John was that his increased confidence and skill gave him greater power within the system. "And I know where the real power is within a school structure, so I know how to deal with that. Doing this has given me a way to write which I did not have to increase that particular power base . . . Talking at places, knowing that I can stand up in front of that group and say what I want to say . . ." (Interview, 6/83). Therefore, his experience did not cause John to change stage but to become more proficient at operating within his given one (horizontal decalage).

The best part of the experience for John was "being thought of as an expert . . . "so that when you're meeting (other people) they have the feeling that you know something and you even have the feeling that maybe you know something. That's a good feeling, good experience" (Interview, 6/83).

Florence scored at the Conscientious stage at the beginning of the project. One incident in the school in Year 2 stands out in which she felt that her professionalism, her way of operating (her self system) was challenged by an imposed (mandated) staff development program. She was unable or unwilling to seek support or validation of her dilemma from Lori who was responsible for carrying out the staff development mandate, and Lori's entrenchment in her own relatively new role as part-time staff developer in the school left her unable to offer or suggest alternatives to Florence. It seemed that after this incident that Florence withdrew a part of herself from the group. She continued to carry out necessary tasks but perhaps lowered her expectations and commitment in order to guard against further challenges to her working self system. As a result in the final interview she expressed her perception of minimal outcomes for the project. The only outcome she mentioned in terms of impact on the school was a specific change in testing policy that the team had recommended. Personally she said she felt satisfied with the work of the team "I think we did a good job" but did not express any other impact of the project on herself and the school.

Another issue of importance in analyzing Florence's changes is the loss to her of Jane on the team during Year 2. During Year 1 she has said that she valued the different perspective that Jane (who scored at the subsequent Individualistic stage) brought to the team, and it is well documented in team meetings and her logs that she looked to Jane as a resource and even a catalyst for her own thinking about new perspectives.

In Florence's Year 1 mid-year interview, she says, "I literally never see Jane except during our meetings on Wednesday and I've started to think about a lot of things that Jane has brought up which I never thought of as affecting me before or having anything to do with me at all." In her final interview Florence said that she thought Jane had made "an important contribution the first year . . . Jane was sort of like the devil's advocate." Florence continued to value and build up her new friendship with Jane even after Jane left the team and in her final interview she said, "Now Jane and I make a point to come to each other's rooms and talk to each other and see each other and it is nice, its really nice. Its one of the big advantages to me." Jane's leaving the team may have prevented the team interaction from being as growth producing as possible for Florence.

Like John at the Conscientious stage, Brooks was able to clearly define both the personal and professional outcomes of the project for herself. One of Brooks' original goals was that the project would "establish a dialogue within the school." The dialogue of the group process made a distinct impression on Brooks: "I'm absolutely convinced that it was the process that was really important." She said that the process was the key more than the generalizable results, especially since everything keeps changing in the school. The interpersonal focus in the group was crucial to Brooks. She said that although she was unsure of what is going to happen as a result of their work, "some very ordinary teachers became very extraordinary in a short period of time." The ability of Brooks to reflect on her thinking and to live with doubts differentiates her from John (she said, "Am I saying that our conclusions don't really matter or are not important to be addressed . . . am I saying that because I know that I may or may not address them and I don't want to disappoint myself? Or is it because I really feel that it was the process that was most important?"). Certainly she distinguished between the process and outcome, a characteristic of transition to the next Individualistic stage.

Additional signs of Brooks' transition to the Individualistic stage were her increased respect for individuality, especially for people who were different from herself. Moving into the Postconventional or Principled stage of moral development, Brooks was aware that people hold a variety of values and opinions. She said, "I think that I've grown more accepting of people and their differences and I see more of an ability to compromise and to work with people who I don't necessarily socialize with or philosophically agree with, but I'm much more able to realize that there is a greater good for being together as a group . . ." Although Brooks said this, we note that her actions during the project suggest that she was unable to work initially with Ted but did learn to accept his differences primarily by giving up, in a sense, on her expectation that he would take on obligations and duties in the group and instead seeing him as a person who may have needed more instruction, more teaching, more direction.

The horizontal decalage concept was also seen in Brooks' growth over the year. At the beginning, she was hoping the project would help her "cope with all the changes" that had happened at the junior high. In her interview after Year 1, she said she had more control over the kinds of things happening to her, that she was actively building her concerns into the research design (focus on stress as related to scheduling issues). At an interview midyear through Year 2, she said that the research project, the reading she had done, her greater awareness of the school context ("I sometimes see why principals and vice principals have to make the decisions like they do, because . . . there are so many decisions") has all helped her feel more in control. In Kegan's (1982) terms, Brooks was assuming her own personal authority and her personal autonomy within the system. These characteristics fit what Kegan calls the institutional stage of development where Brooks' self system identity had emerged. Brooks said she felt less burned out because she found that the more a teacher feels under control of a situation in which there is a lot of pressure and tension, the happier she is with the answer she gets from the situation.

In her final interview, she felt in control. She no longer felt trapped but felt, "I have control, I have skills, I have knowledge, I have the power, I can deal with the problems that are coming up." She also said that if she is in a situation again (unable to cope with the changes) that she knows there will be resources available to help her look at the problem. For Brooks, the ARCS project was a set of such resources. Brooks, like John, said that her teaching had benefited from the project, and that she was at peace with her teaching now. She saw changes in herself and said that after working on this research project, she realized the issues causing stress in the school were not going to change so somebody had to change and "it was me." There is a sense that more than ever, Brooks, like John, was embedded within her own self system. For Brooks, this meant leaving what Kegan calls the interpersonal system, with its dependency on external reinforcement. She is moving toward her own internal reinforcement.

Elliot, at the Individualistic stage, continued to discuss project outcomes (as he did goals) in terms of his own professional growth. He noted that the best thing about the project was the intellectual and personal excitement in the national conferences as he saw and met speakers whom he may have quoted in his written papers over the last few years.

Elliot generalized his experience in the research team to his goals in the future. He thought about the path the team took in its process and would like to research how a different team would progress under different conditions. He described the research process of the team as "the crooked path we took in developing research questions and developing our instruments and making our conclusions" and now that "you've gone this crooked path in your early formula . . . then you could do a real rigorous measurement." Originally, Elliot forecasted limited benefit for the school (participation would be useful and helpful for the participants and their students) and he continued with this forecast. After the presentation with the staff and administration at the school site, Elliot expressed pessimism about school change as a result of the team's research findings and report and went on to describe what he would use the experience for.

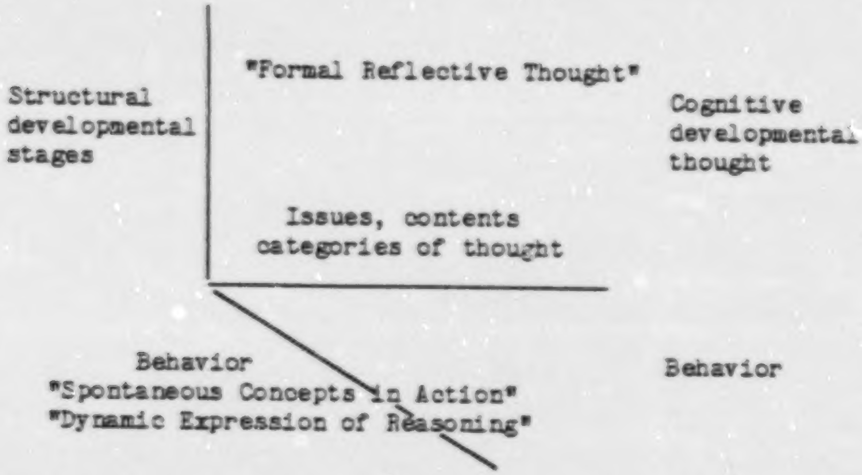
> "It's obvious from the presentation to the faculty that the school isn't going to be any different . . . Personally, I've developed a little confidence and also interest in pursuing the topics related to action research and, in general, any topics that would broaden my own experience or bring some sort of recognition to me . . . In other words, I would like to compile and publish some original research of some sort." (Interview, 6/83)

Since the project has ended, Elliot has continued to investigate the possibility of further graduate study at the university. Elliot is actively redefining his career; although he sees teaching as a professional career he is not limited by the definitions of duties, performances and work roles that the school as an institution gives rise to. Instead he could be viewed as entering the post-institutional system where an interdependent self-definition retains primary focus and self-actualization becomes a goal.

9.0 CONCLUSIONS

The research questions of this study and the variables investigated are summarized in Table 19, Research Questions. A number of working hypotheses were developed in the case study analyses of teachers in two site-specific junior high/ middle school collaborative action research teams.

The analysis of cognitive-developmental understanding and interpersonal-social functioning in a collaborative action research team was undertaken to investigate questions related to adult developmental theory by testing it in practice. In the following diagram, (Selman, 1980, p. 289), the horizontal and vertical dimensions represent most investigations of developmental theory to date. Structural stages of development (vertical axis) are usually investigated through reflective hypothetical interviews or written questionnaires to ascertain issues, contents, and categories of thought (horizontal axis).


"Formal Reflective Thought"
Structural developmental stages
Cognitive developmental thought
Issues, contents categories of thought
Behavior
"Spontaneous Concepts in Action"
"Dynamic Expression of Reasoning"
Behavior

The orthogonal axis, Behavior, is least investigated to date and most interesting. Behavior is the dynamic expression of reasoning, a person's actions compared to their cognitive-developmental thought capability. By studying the group and research task processes in a collaborative research team, the findings (in Sec. 8) suggest an understanding of the functional role of cognitive/social developmental theory in teacher behavior in schools.

The conclusions of the study are presented in the same order as the Research Questions in Table 19. The following points relate to findings about the Individual Differences/ Teacher Development variables.

Table 19

RESEARCH QUESTIONS

1. TO WHAT EXTENT DO TEACHERS' STAGES OF ADULT DEVELOPMENT INFLUENCE AND AFFECT THE PROCESS AND OUTCOME OF A COLLABORATIVE ACTION RESEARCH PROJECT?

   INDIVIDUAL DIFFERENCES/TEACHER DEVELOPMENT VARIABLES

   - COGNITIVE-DEVELOPMENTAL STAGES
   - CAREER STATES
   - LIFE AGE/CYCLE PHASES (AGE, KEY ISSUES OF LIFE AND CAREER)
   - STABILITY/TRANSITION STATES OF LIFE AND CAREER
   - REASONS FOR PARTICIPATING
   - REASONS FOR BEING AT THE MIDDLE/JUNIOR HIGH SCHOOL

2. HOW DO THE CONTEXTUAL VARIABLES OF THE SCHOOL AFFECT INDIVIDUALS' RECEPTIVITY TOWARD NEW IDEAS AND SUGGEST PREVAILING PATTERNS WHICH CREATE POSSIBILITIES OR SET LIMITS IN A COLLABORATIVE ACTION RESEARCH PROJECT?

   ORGANIZATIONAL/SCHOOL CONTEXT VARIABLES

   - SCHOOL PHILOSOPHY
   - HISTORY OF CHANGE IN THE SCHOOL
   - ROLE DEFINITIONS, NORMS, CLIMATE, REWARDS, EXPECTATIONS, COLLEGIALITY, EXPERIMENTATION

3. WHAT IS THE ROLE AND IMPACT OF COLLABORATIVE ACTION RESEARCH IN AFFECTING INDIVIDUAL/SCHOOL DEVELOPMENT? TO WHAT EXTENT DOES COLLABORATIVE ACTION RESEARCH PROVIDE SUPPORT AND CHALLENGE FOR INDIVIDUAL/SCHOOL DEVELOPMENT?

   COLLABORATIVE ACTION RESEARCH VARIABLES

   - DEFINITIONS/EXPECTATIONS OF COLLABORATION, COLLABORATIVE RESEARCH, RESEARCH, RESTRUCTURING, CHANGE, . . .

First, teachers' life/age cycles and career phases are reflected in the content of their reasons for participating in a collaborative action research project. More teachers in this project, and more women than men, perceive themselves to be "in transition" compared to other periods of their lives. Teachers' personal/professional goals for their participation on the team indicate their perception that the research team is more useful to them during periods of transition than stability in their lives.

Second, a teacher's cognitive-developmental stage perspective defines a context or meaning system through which each interprets and acts on issues related to the context of the school and the workings of the action research team. The same underlying structures which shape a teacher's meanings in his/her conceptions and attitudes toward change also operate in his/her conceptions and functioning in terms of the group dynamics and the collaborative research process, team leadership and the university researcher, principal in relation to the team, and goals and outcomes for the research project.

Related to the Organizational/School Context variables it was found that the collaborative research team became a temporary system in the school that differed from the permanent system of the school in a number of significant ways: climate, norms, processes for decision making, shared experiences, possibilities for communication, collegiality, and experimentation, and expectations and rewards.

The newer temporary system of the collaborative action research team becomes self-sufficient and as such provides a positive context within which teachers can try out new patterns of thought and behavior. A school-based team cannot, however, exist in a vacuum. As part of the permanent system it has to find mediums of co-existence if the team's research results are to have an effect on the permanent system. Balancing the need for self-sufficiency in the temporary system and co-existence with the permanent system is a difficult yet primary task of the school-based collaborative research team.

Even though the collaborative action research team becomes a temporary system within the more permanent system of the school, there is a general consistency or stability in each teacher's conceptions and attitudes and behavior, based in their meaning system which can be described by cognitive-developmental stages. At times the temporary system supports new teacher attitudes and behavior; at times it challenges old familiar teacher attitudes and behavior.

Findings of the Collaborative Action Research variables as compared to previous studies of collaborative research suggest the following points.

First, the collaborative research team proceeds through the different steps and phases of research in a cyclical rather than linear fashion as it conducts its research. In addition, the group dynamics are intertwined with the team's research process, so that the project outcomes depend on the interactions among the research task, research process, and group dynamics.

Second, teachers' unique perceptions and abilities enable them to take on different roles and tasks according to varying needs of the action research team over time. This finding follows more recent writings on collaborative research which suggest that parity does not mean equal responsibility at all points in the project, but implies that team members assume responsibility when they have the skills and knowledge to do so. This study has found that the framework of developmental stages enhances the understanding of the context of how teachers' unique abilities are woven into the team's task, research, and group process.

Third, taken together, the research project, research process, and group process create an experience through which team members may contribute to educational theory, improved school practice, and their own professional development. Success in achieving all three of these outcomes will depend upon the interests, skills, and needs of participants; the project structure; the choice of research topic; the relationship of the team to the authority structure in the school or system; and the processes of interaction which emerge in the group. Although it appears worthwhile to pursue all three aims of collaborative action research, the context-specific factors related to the individuals, the school, and the group will continue to affect the outcomes.

Fourth, the collaborative action research team operating as a temporary system within the more permanent system of the school can provide the general supports and challenges needed for individual teacher change: (1) opportunities for practical application of new learning followed by examination and reflection on the experiences in meetings, conferences, and through introspection; (2) chances to try out more complex roles and responsibilities with stress on learning to take the perspective of others; (3) on-going on-site collaboration, supervision, advising and consulting among teachers and university professors as researchers; and (4) provision of a supportive environment to deal with the times of cognitive conflict in the challenges of new learning and experiencing. These four focus points for staff development were suggested (Oja, 1980) as necessary for continued adult development.

Implications for Staff Development

Characteristics of developmental stages of teachers will help the staff developer and/or university professor on a collaborative research team to understand teachers' attitudes and behavior as they interact in the collaborative research process.

In this study, the university professor served as both researcher and staff developer on the teams. In previous projects (which were not school-site specific) the staff developer has often been the liaison to district-wide administrative level decisions and has primarily been the facilitator to the "development" and dissemination of the team's findings to teachers and staff outside the team and in the school districts. In this project, the university professors as researchers in the group provided their research skills and provided group maintenance functions.

This project has found that the teachers on the teams valued the process of the team itself most highly and perceived changes and growth in themselves as a result of that process. Although their concerns also focused on how the action research results would contribute to improved school practice and to educational theory, it was their experiences on the team which all say they will take back with them into the everyday workings of their classrooms, schools, and districts.

The importance of this finding should not be minimized. On the contrary, the importance of the team's experiences lead to even more crucial questions to be asked of the research process and group dynamics, in particular, a new role for the university researcher on the team. It is suggested that the university researchers consider issues of adult development as they work with the team members.

The findings of the case histories of teachers all on one team who were representative of different stages of development suggest that the same basic structures which shape a teacher's meanings and attitudes toward change also operate in that person's conceptions and behavior in terms of the group dynamics and the collaborative research process, team leadership and the university researcher, principal in relation to the team, and goals/outcomes for the research project. In particular, at the modal Conventional stages of development, the Conformist and Self-Aware ego stages, this study has documented teachers' tendency to conform to external rather than self-evaluated standards and to have little self-awareness and little appreciation of multiple possibilities in problem-solving situations and the resulting effects on the collaborative research process. As teachers shift to the Conscientious stage, the study documents their tendency toward inner directedness, sense of responsibility, stress on achievement, and their dawning recognition of individual differences in attitudes, interests, and abilities, but little toleration for paradox, contradiction or ambiguity.

At the transition to Post-Conventional stages of development, the Individualistic ego stage for instance, this study has documented the teacher's ability to assume multiple perspectives, utilize a wider variety of coping behaviors in response to school and team pressures, employ a broader repertoire of group process and change strategies and be "more effective" in many collaborative research decisions because of the ability to be self-reflective, self-evaluative, and interpersonally sensitive.

Not only does this study show how teachers' developmental stages affect their interactions in the school setting and the collaborative research team but it also shows the operation of the school system through the teachers' eyes.

Knowledge of the characteristics of teachers' meaning systems at each developmental stage can help a university researcher on a collaborative research team to recognize the assets/limitations of teachers' attitudes and the consistency/inconsistency in their functioning as it affects the collaborative research tasks, process, and group dynamics. The case history analyses of teachers in the same school, interacting on the same team, suggest qualitative differences in the way these teachers identified the research problems and conceptualized solutions in the action research process. Awareness of teachers' stages of cognitive development can help university professors to understand the teachers' decision making on the team and recognize the dimensions of individual teacher change within the context of the school and the collaborative action research team.

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A Two Year Study of Teachers' Stages of Development in Relation to Collaborative Action Research in Schools

APPENDICES TO FINAL REPORT

September, 1983

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Durham, New Hampshire

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The work upon which this final report is based was performed pursuant to Contract No. G-81-0040 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

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APPENDIX A

REVIEW OF THE LITERATURE

Collaborative Action Research

Lisa Smulyan

ACTION RESEARCH ON CHANGE IN SCHOOLS: A COLLABORATIVE PROJECT

Lisa Smulyan
University of New Hampshire

Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada. April, 1983.

Introduction

During the past eight years, educational researchers and practitioners have turned to methods of collaborative action research as a way of meeting the investigative needs of all members of the educational community. Action research, a term first used in the 1940's by Kurt Lewin, implies the applicatio of tools and methods of social science to immediate, practical problems, with the goals of contributing to theory and knowledge in the field of education and improving practice in the schools (Kemmis, 1980). Collaborative action researc suggests that each group represented in the process shares in the planning, implementation, and analysis of the research, and that each contributes different expertise and a unique perspective to the process (Hord, 1981; Tikunoff, Ward, and Griffin, 1979). Today's collaborators often include school district personnel, university faculty or educational research and development center staff, and federal education agencies which provide financial support an guidance. In the first part of this paper, I will present an historical overview of the use of action research in education. I will then describe the basic assumptions and expectations which continue to characterize collaborative action research projects in education. Finally, I will present a brief description of the Action Research on Change in Schools Project as an example o a current action research research project.

Collaborative Acton Research: History

In the early 1940's, Kurt Lewin used the term action research to describe research which united the experimental approach of social science with programs of social action which addressed major social issues (Kemmis, 1980). Lewin, a social psychologist, believed that social problems should serve as the impulse for social inquiry. From the research which followed, theory would emerge, and necessary social change would be achieved.

Lewin (1948) suggested that action research could take two forms: comparative research on the conditions and effects of various forms of social action, and research that led directly to social action. In either case, "Research that produces nothing but books will not suffice" (Lewin, 1948, p. 203). Kemmis (1980) summarized Lewin's goals for action research as follows:

> Knowledge (theory) about social action could develop from observation of the effects of action in context: simultaneously, social needs and aspirations might be met because action programs were aimed at addressing them directly (as action not as principles which might later be applied in action).
>
> (p. 15)

Kemmis (1980) suggests that Lewin's adoption of methods of action research stemmed in part from a growing awareness after World War II of significant social problems, including the rights of the individual, prejudice, authoritarianism, and industrialization. Lewin challenged the traditional role of social scientists, whom he felt needed to address these problems directly: "Socially, it does not suffice that university organizations produce scientific insights" (Lewin, 1948, p. 206). In order to understand and change social practice, social scientists had to include practitioners from the social world under investigation in all phases of their research. Practitioners had to understand that only through the use of the social sciences could they "hope to gain the power necessary to do a good job" (Lewin, 1948, p. 213). By working together, social scientists and practitioners could discover new theory and take action which addressed important social concerns.

Chein, Cook, and Harding (1948) summarized action research in its early stages, noting the unification of theory and practice through the interaction of practitioner and social scientist:

> (Action research) is a field which developed to satisfy the needs of the socio-political individual who recognizes that, in science, he can find the most reliable guide to effective action, and the needs

> of the scientist who wants his labors to be of maximal social utility as well as of theoretical significance.
> (p. 44)

The action researcher studied problems which grew out of the community, rather than his or her own knowledge, and worked to make discoveries which could be applied in the community setting.

Practitioners had to be involved in action research not only to use the tools of social science in addressing their concerns, but also because their participation would make them more aware of the need for the action program chosen, and more personally invested in the process of change (Chein et al, 1948). Lewin advocated the incorporation of group work into the research process because of the power of group interaction in producing commitment and change in attitude and behavior (Kemmis, 1980; Lewin, 1952). Chein et al (1948 suggested that when practitioners were involved in all phases of the research, the degree of precision of the research findings was less important than the appropriate direction of the resulting action or change. Lewin (1948), however insisted that action research involving practitioners was as scientifically valid as any other:

> This by no means implies that the research needed is in any respect less scientific or 'lower' than what would be required for pure science in the field of social events. I am inclined to hold the opposite to be true.
> (p. 203)

Stephen Corey (1952, 1953) was among the first to use action research in the field of education. He argued that the scientific method had never become an important part of educational practice, and that most educational researcher arrived at generalizations with no intention of doing anything with the results of their research. Through action research, however, changes in educational practice would be more likely to occur because teachers, supervisors, and administrators would be involved in inquiry and the application of findings. Teachers themselves supported Corey's assumptions:

> We are convinced that the disposition to study, as objectively as possible, the consequences of our own teaching is more likely to change and improve our practices than is reading about what someone else has discovered regarding the consequences of his teaching. The latter may be helpful. The former is almost certain to be.
> (Corey, 1953, p. 70)

Corey had more limited claims than Lewin for the results of action research. He believed that the value of action research lay in the extent to which it led to improved practice, and that the generalizations which emerged from action research applied to the present situation rather than a broad, representative population. Corey may have recognized what other action researchers like Kemmis (1980) would later experience: the difficulty in producing both generalizable theory and improved practice through action research.

Corey, like Lewin, emphasized the need for researchers and teachers to work together on common concerns. Cooperation among teachers and between teachers and researchers increased the likelihood that participants would be committed to changing their behavior if the study indicated change was necessary. It provided a support group within which members could risk change and experimentation, and prevented those involved from being manipulated or coerced. Instead of being subjects of an experiment, teachers became the experimenters. Cooperation also provided a greater range and variety of perceptions and competencies from which the group could draw, and increased the probability that the study would be within the realm of possibility (Corey, 1953).

Corey felt that only minimal differences existed between scientific research and the common sense problem-solving methods used by practitioners, although he argued that action research required more careful and systematic inquiry and interpretation than the common sense method. In the action research process he outlined, teachers defined a problem, hypothesized or predicted consequences of a certain action, designed and implemented a test, obtained evidence, and generalized from the results. Action research used in this way would help practitioners clearly define their problems, try out new practices, and gather evidence to test their worth. Teachers and administrators would then have a basis for future decisions and actions.

Between 1953 and 1957, interest in action research in education declined. Action research was attacked as methodologically poor and unscientific, and researchers withdrew to the universities to produce studies more acceptable to their colleagues. Practitioners, too, questioned whether or not action research lived up to its promises of helping them improve school practice and began to use other action-oriented methods of inquiry, such as evaluation (Kemmis, 1980).

In 1957, Hodgkinson wrote a critique of action research in education, in which he presented the basic arguments against its use. Practitioners, he said, lacked familiarity with basic techniques of research, and "research is no place for an amateur" (Hodgkinson, 1957, p. 142). Teachers did not have time to do research, and the time they did put into research detracted from their teaching. The use of substitutes for teachers engaged in action research also diminished the quality of students' education, and placed an extra financial burden on the school. Hodgkinson argued that no one had ever examined what happened to teachers after they put the results of their research into practice. He suggested that teachers might actually become more resistant to change because they could defend their present practice by saying that it had been researched and proven good, a defense based on the false assumption that the class or classes researched represented all future classes.

According to Hodgkinson, action research detracted from education in ways other than its negative effects on pedagogy. Within a school, action research required a group leader who was sensitive to individual and group needs. "If people of this sort are not available, group cooperation and consensus may be difficult or impossible to obtain. This could lead to failure concerning the action research, distrust of the teacher for colleagues, and a general lowering of school morale" (p. 143). Action research also emphasized the separate local school and threatened a consistent nationwide program of education.

Finally, Hodgkinson argued that action research was not really research, because it did not meet the criteria of valid scientific methodology. Action research did not go beyond the solution of practical problems, and often did not involve controlled experimentation because of teachers' lack of training in research. Action researchers did not look for broad generalizations in the field of education, nor did they relate their findings to a larger body of theory or knowledge. Hodgkinson's conclusions directly contradicted Lewin's belief that action research was valid scientific inquiry:

> Perhaps it would be better to define action research as quantified common sense rather than as a form of scientific, empirical research.
> (Hodgkinson, 1957, p. 146)

Sanford (1970) points out that the shift away from action research and back toward a distinct split between science and practice was advocated in the 1960's by the social science establishment in addresses at annual meetings and public panels and in reports from commissions. This led to further splits in training, so that colleges and universities produced experts in model building, research design, and experimentation, or experts in planning, execution, and evaluation.

Federal funding agencies institutionalized the separation of scientific inquiry and social practice during this time period (Sanford, 1970). Between

1954 and 1972, the federal government's goal in educational research and development was to promote "improvement oriented change" (Guba and Clark, 1980, p. 9). Federal education agencies used a social science model, in which university scholars applied for federal funding, did their research, and presented the funding agency with a report of their fndings. The federal government made no provisions for linking the research to development or dissemination processes so that it could be used to create change in schools. Only after the passage of the 1972 Education Amendments Act which established the National Institute of Education did the federal government begin to fund educational research and development centers which coordinated efforts for research, development, diffusion, and adoption (Guba and Clark, 1980).

Because of the critiques of action research as unscientific an unproductive and the emphasis in the social sciences and federal funding agencies on the separation of research and practice, action research in the 1960's and the early 1970's became inquiry done by practitioners with the help of a consultant (Ward and Tikunoff, 1982). During these years, action research was used to provide in-service teacher training and to improve practice rather than to produce generalizable results or theory.

> Action research emphasizes the involvement of teachers in problems in their own classrooms and has as its primary goal the in-service training and development of the teacher rather than the acquisition of general knowledge in the field of education.
>
> (Borg, 1965, p. 313)

The consultants or scientists involved in action research projects served as "democratic leaders" who would "stimulate and develop the talents of the group and train and supervise the participants" as they planned, conducted, and evaluated their research (Good, 1963, p. 234).

An example of this focus in action research is Schaefer's (1967) proposal that teachers use action research to make their school a center inquiry, rather than a distribution center for information. Through their investigations, teachers could find better ways of teaching a diverse student population the skills and knowledge they needed in society while simultaneously contributing to their own intellectual health, growth, and professionalism. Schaefer did advocate school-university collaboration in action research, but the goal of inquiry remained the professional development of teachers and the production of situation specific, immediately useful knowledge.

In the mid-1970's, new and expanded views of action research in education began to appear, first in Britain as the result of continued interest in action research in other fields, and later in the United States (Kemmis, 1980; Ward and Tikunoff, 1982). The resurgence of action research as a cooperative venture which simultaneously contributed to knowledge in the field and improved practice reflected growing researcher dissatisfaction with traditional research methodology and design and teacher dissatisfaction with available in-service programs designed to help them improve their practice.

In the 1970's, researchers began to question the applicability of quantitative, experimental methodologies to educational settings and problems. Traditional research methods tended to restrict the researcher's focus to short run events, isolated variables, and a limited range of meanings, creating an oversimplified picture of a complex classroom reality (Hall, 1975; Mishler, 1979). The experimental method also required that conditions be held constant throughout the experiment and yielded data about the effectiveness of a project only after it had been completed. Both of these requirements conflicted with a teacher's need to modify and improve a "treatment" throughout the process, and therefore limited the usefulness of the research as a decision making tool for practitioners (Pine, 1981). Clifford (1973), Mishler (1975), Mosher (1974) and others saw action research as a method which would help researchers more successfully examine the contexts and context-dependent actions and meanings in which learning occurred while helping teachers address their more immediate teaching concerns.

Another reason for the shift back to action research was researcher and teacher dissatisfaction with the linear model of research and development in which researchers validate new knowledge, develop it into a practical format, and disseminate it to practitioners for adoption (Krathwohl, 1974). This process created a gap between the researcher and user, and usually resulted in little or no implementation of research findings at the classroom level. Research infrequently reached practitioners, and when it did it was often reported in language which had no meaning for them. Teachers usually felt that much of the research available to them lacked practicality and was inconsistent with classroom reality (Fisher and Berliner, 1979; Huling, 1981).

The linear model of educational research and development also imposed implementation models and procedures on practitioners who had no ownership of or commitment to research in which they had had no part (Clifford, 1973; Hall, 1975; Huling, 1981). Elliott (1977) explains that teachers must become conscious participants in the development of theories which arise from their practical concerns in order to make fundamental changes in their practice. Only through participation in planning and implementing new practices and observing and analyzing their effects will teachers accept and use research findings. Again, in the 1970's, action research was seen as an alternative to the traditional, linear model of scientific research, because it included practitioner involvement in research which would be of immediate use in the school setting.

Practitioner involvement in action research also addressed growing concerns during the 1970's that traditional staff development programs did not meet teacher needs. Action research would provide teachers with the opportunity to gain knowledge and skill in research methods and applications, and to become more aware of options and possibilities for change (Tikunoff, Ward, and Griffin, 1979). Teachers participating in action research would become more critical and reflective about their own practice. Elliott (1977) quotes one teacher involved in an action research program who said, "Indeed the value of this research to us may be in the analysis the teacher make of their methods and their whole approach to teaching" (p. 13). Teachers' heightened perceptions and understanding gives them greater control over their own behavior and makes them independent of others for professional growth (Elliott, 1977; Mosher, 1974; Pine, 1981). McLaughlin and Marsh (1978) saw staff development through action research as a model for professional growth and an ongoing process of problem solving and program building within a school.

The revival of collaborative action research as a method of educational research in the 1970's and 1980's is reflected in several projects currently underway or recently finished. All of these projects involve school teachers and university faculty or research and development center staff. Ward and Tikunoff (1982) group the reports of these studies into two categories: those which report research findings of collaborative action research projects, and those which focus on the process of conducting collaborative action research. Examples of reports of research findings include Clark and Florio's 1981 investigation of the process of writing instruction, and Filby et al's 1980 study of the effects of class size on academic performance. Reports on the process of conducting collaborative action research include Tikunoff, Ward, and Griffin's (1979) Interactive Research and Development on Teaching study, which found that interactive research and development can produce rigorous research and stimulate staff development under certain conditions; Little's (1981) study of staff development in a school district; and Hord's (1981) study which focused on the collaboration between a research and development center and a school district whose goal was to raise student performance on achievement tests.

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Another recent study is Huling's (1981) Interactive Research and Development project in which she tried to determine the effects of participation in a collaborative action research project on teachers' concern for and use of research findings and practices. She found that teachers who participated in the project demonstrated significantly greater changes in concern about the use of research findings in their practice, higher levels of research and development skills, and more positive attitudes about using research findings in their teaching than teachers who did not participate.

Action research, initiated in the 1930's by Kurt Lewin, and adapted by educators in the late 1940's, has re-emerged as a viable method for conducting educational research which contributes to knowledge in the field and improved practice. In recent studies, the method itself has become a topic for inquiry with the assumption that an understanding of the elements underlying successful collaborative action research will lead to more effective resaerch designs and processes in education.

Expectations of Collaborative Action Research

Ward and Tikunoff (1982) point out that the underlying premises and requirements of current action research projects closely resemble those applied in action research conducted thirty and forty years ago. The key to action research past and present appears to be its collaborative nature, through which the needs of both researchers and teachers are met.

> Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework.
>
> (Rapoport, 1970, p. 499)

Despite the fact that the specific forms and definitions of collaboration differ from project to project, each "grounded by the participants and institutions they represent" (Ward and Tikunoff, 1982), certain common expectations about the process of collaborative action research emerge.

These expectations can be grouped into three categories:

1) participation in the research process: teacher and researcher roles;
2) staff (practitioner) development: expectations and outcomes; and
3) conditions or requirements necessary for successful collaborative action research.

Although the categories contain some overlapping elements, I will present each as separate, and then discuss some of the problems involved in carrying out a collaborative action research project.

1. Participation in the research process: teacher and researcher roles

Hord (1981) distinguishes between cooperation and collaboration, suggesting that in the former, participants reach some agreements but proceed individually toward self-defined goals, while in the latter, participants work together on all phases of a project which provides mutual benefits. Little (1981), Oja and Pine (1981), and Tikunoff, Ward, and Griffin (1979) also emphasize that in collaboration, teachers and researchers set common goals and mutually plan the research design, collect and analyze data, and report results. They claim that the involvement of both groups in every stage of research, development, and application allows for the connection of theory and practice throughout a project, and provides both teachers and researchers with the "opportunity for reflection and for unexpected insight into situational realities" (Little, 1981, p. 4).

Most collaborative action research focuses on practical problems defined by the participating practitioners (Elliott, 1977; Rapoport, 1970; Wallat, Green, Conlin, and Haramis, 1981). The researcher, or social scientist, may provide related theoretical problems, or plan additional research in conjunction with the teachers' project, so that the research addresses and contributes to both practical and theoretical issues and concerns. Tikunoff, Ward, and Griffi (1979) describe this sharing of responsibility as follows:

> ... collaboration is viewed as teachers, researchers and trainer developers working with parity and assuming equal responsibility to identify, inquire into, and resolve the problems and concerns of classroom teachers. Such collaboration recognizes and utilizes the unique insights and skills provided by each particpant while, at the same time, demanding that no set of responsibilities is assigned a superior status.
>
> (p. 10)

Wallat et al (1981) point out that "parity and equal responsibility" in collaboration "do not mean that each member has an equal role in decision makin or input during all phases of the study. Role shifts occur depending on the needs of the situation. Continuity is provided by the researchers through the communication and collaboration network they establish with those involved in the study" (p. 94). In collaborative action research, researchers and practitioners contribute from the knowledge and skills which they have to a jointly defined research project and process.

In assuming these roles, both researchers and teachers must become conscious of possible differences in perceptions and assumptions which result from their different positions in the field. To avoid conflicts, teachers and researchers must maintain open communication throughout all stages of the process (Wallat et al, 1981). For teachers, this may require a willingness to discuss their own problems and limitations, to share in the activities and idea of others, and to be open to learning new skills and behaviors of use in the research process (McLaughlin and Marsh, 1978; Pine, 1981).

Researchers must convince university peers and funding agencies that working in schools is viable research (Fisher and Berliner, 1979; Rapoport, 1970), and must themselves accept that "getting their hands dirty" in classroom complexities is an appropriate and rewarding research process (Pine, 1981, p. 13). In order to make collaboration successful, researchers must learn to work with teachers as peers and be sure that their work supports rather than interferes with teachers' ongoing school responsibilities. Bown (1977) suggests that university researchers should understand that

> ... collaboration is an endless series of daily acts which respect equal partnership in joint undertakings rather than a flag to be saluted annually with glib rhetoric.
> (p. 7)

2. Staff development: expectations and outcomes

Kurt Lewin advocated action research into social problems in part because he believed that social change depended on the commitment and understanding of those involved in the change process (Lewin, 1948). Action research in education has often been seen as a way of involving teachers in changes which improve teaching practice. The assumption, based on Lewin's work, is that if teachers work together on a common problem clarifying and negotiating ideas and concerns, they will be more likely to change their attitudes and behaviors if research indicates such change is necessary (Hall, 1975; Hodgkinson, 1957). Elliott (1977) and Little (1981) both suggest that collaboration provides teachers with the time and support necessary to make fundamental changes in their practice which endure beyond the research process.

Another expected outcome of action research in education, beyond change in practice, is teachers' professional growth. Collaboration provides teachers with many different perspectives of problems and solutions from colleagues and university faculty. Through action research, teachers also gain new knowledge which helps them solve immediate problems, broaden their general knowledge base as professionals, and learn research skills which can be applied to future interests and concerns (Mosher, 1974). As a result, teachers become more flexible in their thinking, more receptive to new ideas, and more able to solve problems as they arise (Pine, 1981).

Hall (1975) suggests that action research also benefits the community in which it occurs, in this case the school or district, as well as the individual teachers who participate. Hall and others claim that through the process of collaboration, teachers tend to arrive at research questions which address school or district concerns rather than the problems of an individual teacher in the group. Their research results can then be used in the school or system as well as in participating teachers' classrooms (Borg, 1965). Teachers who have participated in collaborative action research projects also say that the process created new patterns of colleagiality, communication, and sharing in their schools which carried over into and improved other activities and projects (Little, 1981). Collaborative action research seems to address staff development concerns for school and district growth as well as for individual teacher change.

3. Conditions necessary for collaborative action research

Successful collaborative action research appears to depend on teacher characteristics, school organization and climate, available resources, and research project structure. Teachers who have a sense of their own efficacy and who are willing to discuss their concerns and experiment with new ideas will be most likely to contribute to and benefit from action research efforts (Hall and Hord, 1977; McLaughlin and Marsh, 1978). Rainey (1973) also suggests that teachers who have some knowledge of research techniques and who can cooperate with other faculty and students will be successful participants in action research.

Elliott's (1977) study indicates that the school context affects teachers' willingness and ability to participate in the process of action research. Corey

(1952) and Pine (1981) suggest that teachers need an atmosphere in which they are free to identify problems for inquiry, experiment with solutions, and express and share ideas with colleagues and administrators. Some of this freedom comes from an administration which recognizes collegial rather than hierarchical authority, and allows teachers to make decisions which influence their practice and inquiry (Schaefer, 1967). Ideally, the administration not only provides teachers with the freedom to experiment, but also gives them the recognition needed to legitimize their project and ensure its continuation in the future (McLaughlin and Marsh, 1978).

Administrative support may take the form of resources such as time and the technical and material assistance necessary to the research project's success. Many who advocate collaborative action research claim that time restraints often limit the research. In 1967, Schaefer said that teachers needed reduced teaching loads in order to step back from and reflect on teaching and learning. More recently, as economic and demographic pressures decrease the amount of in-school free time available to teachers, those writing about action research suggest only that "participants must be willing to devote the necessary time to joint endeavors" (Hord, 1981, p. 9). Although the question of how to provide it remains unanswered, agreement exists that time is a valuable resource and a necessary condition for successful collaborative action research.

Action research also requires technical assistance and material support, which may include xeroxing, locating literature, and designing data collection tools. Teachers may need training in research techniques or new classroom practices and the input of observers or consultants in their classrooms as they conduct their inquiry. At times these resources can be provided by the university participants in the project; in other cases the school or system may agree to support the project in these ways.

The final set of requirements for successful collaborative action researc concerns the organization of the project itself, and includes jointly-defined goals, frequent communication among participants, and strong leadership. Hord (1981), McLaughlin and Marsh (1978), and Wallat et al (1981) all stress the importance of negotiating and articulating clear and specific goals from the outset of the project. Clear goals provide all participants with a sense of th project's value and what they will gain from it and establish a shared frame of reference from which hypotheses and future plans can be generated. Commitment, shared control, and participants' roles and functions can all develop from mutually defined goals.

Shared goals imply patterns of communication which facilitate interaction Communication between university researchers and teachers can often break down due to differences in language, perceptions, and expectations which result from their different positions in the field (Holley, 1977).

> Given this natural breach of language, and more importantly the thinking it represents, a collaborative research effort must take special pains to ensure that the different members of the collaborative team use the same language and understand each others' concerns.
> (Mergendoller, 1981, p. 6)

Frequent interaction among participants in the research project, through team meetings and more informal discussions, is a requirement of action research which helps to overcome communication difficulties and contributes to mutual understanding of goals, techniques, and perspectives (Corey, 1953; Hord, 1981).

Hord (1981) also calls for strong leadership in a collaborative action research project, by someone who can set a positive example as a collaborator. This often means that the leader must disperse his or her power, sharing contro and allowing others to delegate and assume responsibility. Hord's comments and Bown's (1977) suggestion that researchers must be sensitive to the demands of the collaborative process on teachers, are among the few references to group leadership or to the characteristics of university researchers which contribute to successful collaborative action research. This lack of emphasis may reflect the fact that those reporting on action research tend to be university researchers; teachers themselves infrequently report on the research process or findings, although several of the reports (Hord, 1981; Little, 1981; Tikunoff, Ward, and Griffin, 1979) take teacher responses into consideration in discussing characteristics and requirements of collaborative action research.

4. Problems in conducting collaborative action research

Many of the problems involved in carrying out collaborative action research stem from the same element which contributes to its value: its collaborative nature. The first problem is initiating a collaborative project between school and university. Ferver (1980) points out that universities tend to be more interested than schools in participating in collaborative research. Practitioners have found internal resources for solving their problems and remain skeptical of university people's interest in or ability to solve the problems schools presently face. Ferver also notes what he calls "problems of match" between schools and universities which make mutual goal setting and research design difficult. These problems of match include discrepancies between what university faculty are funded, trained, and rewarded to do and what schools want them to do, and between the theoretical, information-giving orientation of the university faculty and the problem solving and staff development needs of the school.

A second problem arises from the idea that action research should address the concerns of all participants. University researchers approach a collaborative project with the expectation that it will lead to generalizable results which can be shared with the educational research community. Teachers expect to find ways of improving their teaching or their school, and they emphasize the importance of using the project as a way of sharing ideas with colleagues and reflecting on their own practice (Florio, 1983). Differences between researcher and teacher concerns may lead to different perceptions of acceptable group processes and research outcomes, and may create conflict or frustration for both teachers and researchers.

Collaborative action research which focuses on the concerns of practitioners may not always be able to produce both generalizable knowledge in the field of education and improved practice. Kemmis (1980) explains that traditional educational theory has not emerged from his study:

> Preliminary analysis suggests that the theoretical prospects for action research are only moderate, if 'theoretical' payoff is measured in terms of the literature of educational researchers. ... If theoretical payoff is defined in terms of the development of critical communities of practitioners, then the results are far more encouraging.
> (p. 13)

Others have claimed that teacher development is not always an outcome of collaborative action research. Like Hodgkinson (1957), Broadfoot (1979) argues that teachers are unlikely to make any major changes in their practice over time even as participants in a collaborative action research project, because of their investment in the educational system as it stands. It may also be the case that some of the research carried out collaboratively has no more use or meaning for teachers than most traditionally conducted research. Oja (1980) suggests that teacher growth through involvement in action research may depend on each individual's stage of psychological development. Some project participants may be more willing and able than others to experiment and change.

The third problem arises in the processes of collaboration which occur between the project's inception and the production of its results. Hord (1981) explains that each teacher or researcher who participates in a collaborative project has "an individual interpretation of the meaning of the process, and the extent of his/her contribution to it will rest on that individual presumption" (p. 4). This suggests that even if university researchers and teachers are using the same language, they may be attributing different meanings to the same words. Collaboration entails trying to discover and account for the diverse meanings, interests, and requirements of the individuals involved as the group identifies a researchable problem and designs, implements, and analyzes its research (Borg, 1965; Little, 1981).

Hodgkinson (1957), Hord (1981), and Mosher (1974) call for good leadership in collaborative action research to be responsive to individual and group needs and concerns, but they do not explain leadership techniques or characteristices which would help or hinder individual and group growth. Pine (1981) explains that collaboration requires a conscious effort, although he, too, leaves out specific means for achieving positive interaction:

> We gratituitously assume collaboration will happen if we bring people together as members of a task force or committee. It is essential to have people focus in right away on what collaboration demands ... Collaboration is a dialectical and dialogical process with a lot of give and take and its use in action research requires that university faculty and classroom teachers build trust, communicate, and solve problems from the beginning. Action researchers need to prepare themselves for dealing with the conflicts which naturally emanate from the interface of the different norms, behavioral regularities, and values of the university and school. Collaboration is not achieved naturally. It is a sophisticated process which must be taught and learned deliberately.
> (p. 27-28)

ACTION RESEARCH ON CHANGE IN SCHOOLS

The Action Research on Change in Schools project consists of two research teams which comprise a National Institute of Education sponsored project entitled A Two Year Study of Teacher Stage Development in Relation to Collaborative Action Research in Schools (Oja and Pine, 1981). This project proposes to examine the relationships among teachers' developmental stages, action research in schools, and individual teacher change. By examining the process in which teachers engage while carrying out an action research project in their school, the principal investigators, Sharon N. Oja, University of New Hampshire, and Gerald J. Pine, Oakland University, planned to investigate the following questions:

> 1) To what extent do teachers' stages of development (ego, moral and conceptual) influence and affect the changes they undertake?
>
> 2) How do the contextual variables of the school, i.e. role definition, rewards, expectations, norms, social climate, structure, etc. affect individual teacher change?
>
> 3) What is the role and impact of action research on the promotion of individual change?
>
> (Oja and Pine, 1981, p. 1)

Oja and Pine incorporated many of the expectations and assumptions about collaborative action research into their project design. For example, in this project, it was expected that:

- University and school people would work together for two years on a research project which addressed problems defined by the teacher participants.
- Teachers would be involved in every step of the research process, from problem definition to presentation of results.
- Weekly meetings would allow for frequent and open communication among team members.
- Teachers would receive staff development credit for their time spent on the project.
- Each team member would contribute his or her unique insights and skills to the research project and process.
- Teachers would learn new research skills and experience personal and professional growth as a result of participation in the project.
- University researchers would investigate theories of teacher change and growth in collaborative action research, fufilling their professional needs.

In their proposal, the principal investigators explain that their study is, itself, action research, in that it will improve educational practice and contribute to theories of teacher change and growth. The investigators assume that their study will provide insight into the design and implementation of staff development problems that encourage teacher growth and improved instruction. They suggest that their approach is one of "ongoing tentativeness" (p. 39) which allows for continuous revision of questions, hypotheses, and generalizations as data is collected and analysed. "Tentative generalizations will lead to probes about individual change which will lead to new data which are then accumulated with existing data so that tentative generalizations may be revised, which will then lead to the revisions of the problem(s) and probe(s) which lead to new data, and so forth" (p. 41).

The principal investigators chose to implement their study in two junior high schools, one in New Hampshire, and one in Michigan. The schools were matched for size, grade levels, racial distributions, number of students qualifying for federal aid, and history of school change. In September, 1981, the principal investigators sent a letter to all teachers in each school introducing and briefly describing the project. Each then held an introductory meeting for interested teachers at their respective sites. Eight to ten teachers at each site indicated an interest in the project. All were interviewed and asked to complete a number of questionnaires, including the Loevinger Sentence Completion Test (1970), Rest's Defining Moral Issues (1974), and Hunt's Assessment of Conceptual Level (1973). The principal investigators used questionnaire responses to choose five teacher participants from each site who represented a range of subject areas, interests and stages of development.

In October, 1981, each group of teachers began meeting with one of the principal investigators and a research assistant, whose role was to document team meetings and provide research assistance to the team. Each team met weekly from October, 1981 until May, 1982, and again from September, 1982 through May, 1983. The team's goal was to conduct a research project in an area chosen by the teachers and to report its results to NIE and wherever else it felt such a presentation would be appropriate. The New Hampshire and Michigan teams worked independently of one another, with the exception of a joint weekend meeting in May, 1982. At this meeting, team members from each site shared and compared progress and problems and their tentative research proposals which would be sent to NIE in June.

Despite the fact that the New Hampshire and Michigan teams worked independently of one another, both teams focused their research on an aspect of school scheduling. During early discussions of their respective school contexts, both teams noted that scheduling affected the teaching and learning conditions of their school. The New Hampshire team ultimately focused on the effects of organizational changes in the school on teacher morale. The Michigan team surveyed teachers, parents, and students about scheduling practices in the school in order to make recommendations to the school principal about future scheduling modifications. Teachers involved in the projects in both schools reported that their work as members of a collaborative action research team had provided them with valuable experience and an opportunity for personal and professional growth.

SUMMARY

This paper has presented a brief history of collaborative action research, a summary of its primary characteristics, and a description of one action research project currently being completed. Further investigation is underway on the Action Research on Change in Schools project, including a study of the research process and group process experienced by the New Hampshire team (Smulyan, 1983), an examination of the effects of the school context on the two teams (Pine, 1983), and an analysis of the relationships between teacher stage of development and participation in the project (Oja, 1983). All of these studies will be available from the National Institute of Education, or through the project office at the University of New Hampshire.

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Collaborative Action Research:
The Integration of Research and Service

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COLLABORATIVE ACTION RESEARCH: THE INTEGRATION OF RESEARCH AND SERVICE

Gerald J. Pine

THE PROBLEM

While it has always been assumed that educational research and practice should be intimately tied together, research and practice seem to have become alienated from each other. Practitioners seldom conduct research of any kind, but often question the relevance and importance of educational research. In the face of the questions, demands, and problems challenging education, the profession can no longer afford a separation between research and practice. It never could! The reintegration of educational research and practice is essential if any genuine progress is to be achieved in addressing the pressing and important issues in education. Progress by numbers and nomenclature has disenchanted the educational community and the public and has dichotomized research from service.

Educational research has consistently been caught in a fundmental dilemma between the practical or "doing" aspects and scientific or "knowing" aspects of a problem. On one side, are the real, practical demands on the teacher that are specific to the situation. On the other side, are the demands of the scientific; that the knowledge obtained can be shared and used by a community that is larger than those with direct experience of a specific event.

A major problem in integrating research and service is research methodology and design. Because the quantitative methods of the physical sciences have enjoyed the highest academic status, educational researchers "have gone empirical" with a vengeance. Quantitative methodology, as it has percolated down through physical sciences, has become exceedingly popular in educational research, resulting in forced fits between research methodologies and educational problems. The emphasis on quantitative methodologies, particularly experimental design, has limited the selection of research topics to problems that can be addressed by such methods, or, worse, has led us to believe that these methods were sufficient to address any issue that was at hand (Graham, 1979).

However, educators are witnessing a change in the discussion on research methodology in education. A number of scholars assert that the quantitative and experimental research models borrowed from the physical sciences cannot address the major research questions (Graham, 1979; Reid, 1979; Schubert, 1980; Schwab, 1970, 1975; Scriven, 1979). The disparity between the real life problems suggested by the front line work of teachers in the classroom and the awareness that experimental and quantitative research designs no longer work in all cases has raised a number of questions about the appropriateness of traditional experimental research approaches.

The context of Teacher Corps projects illustrates the problem of fit between the experimental method and the improvement of educational practice. Measuring student learning and gains in terms of academic achievement, and affective growth in relation to the goals and objectives of a specific Teacher Corps project is a paramount concern of any project but particularly a project which focuses on research adaptation. The ultimate objective of Teacher Corps Research Adaptation Cluster projects is to introduce and demonstrate through research adaptation needed innovation and change to increase the effectiveness of education for low income, special needs, and minority group children, ways need to be formed to determine the degree to which this objective is achieved. What happens to student learning when research validated practices, products, and processes are systematically adapted to bring about organizational, curriculum, and behavioral change? Will students change in their perceptions of self and others? What kinds of attitudinal and behavioral changes will occur among students? What is the relationship between Teacher Corps preservice and inservice instruction for teachers and student cognitive and affective growth?

In the past the experimental method often has been used in an attempt to address these kinds of questions. But the experimental method for evaluating student growth and achievement as outcomes of a Teacher Corps project or any innovative program has three major problems. First, the application of the experimental design requires that experimental and control conditions be held constant throughout the length of the experiment. This means that all students and/or their teachers must receive only one treatment consistently; contamination must be avoided. If data about differences between students and teachers participating in a Teacher Corps program and students and teachers not participating in the program are to be meaningful, treatments cannot be modified while the experiment is in progress. In accepting the rigorous conditions of the experimental method, one is asked to fit the program to the design rather than vice versa. The use of the experimental method would, then, conflict with the fundamental principle that evaluation should lead to the continual improvement and modification of a Teacher Corps project. Project staff cannot be expected to limit their demonstration efforts and activities to accommodate the constraints of a research design, just to guarantee internally valid data. As project staff members learn about the strengths and weaknesses of their project activities, they may have to change, and sometimes radically alter the project in order to meet the needs of the project's constituencies and clients.

A second major weakness of the experimental method as an evaluation tool, is that it yields data about the effectiveness of a project after the fact. Therefore, while it is useful as a summative device, it has little value as a decision making tool. After the fact data are not provided at appropriate times to enable project staff to determine what their project should be accomplishing, or whether it should be altered. Often by the time experimental data have come in, it is too late to make decisions about plans and procedures which may determine the difference between the success and the failure of a program.

Finally, the experimental method is typically used to study discrete elements of an educational problem and, therefore, often yields isolated factors associated with specified outcomes which have doubtful application to the complexities, convolutions, and changing contexts of varied school and classroom situations. It is unrealistic to assume that any experiment can actually control all pertinent factors save the independent variable. The pertinent factors in children, parents, teachers, classrooms, curricula, communities, homes, and in the interaction of all these variables with each other and with other causal factors are not understood. The fact is, in real life, people do not get assigned to each other, to problems, and to time and place with rigorous experimental randomness and neat designs. To shed light on the real life of the classroom, of the school, of teaching and learning, researchers must either study real life or simulate in the laboratory all the conditions in real life that might possibly be important in determining cause and effect (Goldman, 1979, 42).

Theecology of teaching, the ecology of implementing educational innovations, and the ecology of initiating change require an emphasis on hypothesis generating and qualitative methodologies. An awareness of the multidimensionality of teaching and learning, of curriculum development, and of educational change, compellingly argues for a search of methodologies that facilitate the study of the many dimensions, variables, and meanings that appear simultaneously in the classroom (Tickunoff, Ward, and Griffin, 1979). Tickunoff (1977, 2) observes that "what we call classroom teaching and learning is embedded in a complex myriad of interdependent variables, all of them situationally specific" and Kennedy (1977) refers to "the complex array of human/environmental behavior and variables which influence classroom events, phenomena, and processes." An adequate understanding of the meaning and significance of profile differences for classroom behavior and learning can only be provided through information about the contexts of behavior: the subject matter taught, the physical setting of the classroom, the persona of the teacher, and student opinions and interpretations of behavior (Delamont, 1976, 7). Goodlad (1977) makes a similar point relative to the school curriculum and Carini (1975) argues that in order to understand the phenomena of education perceived reality, particularly participants' views of educational situations, are essential.

Educators need to emancipate themselves from the straight jacket of experimental design and recognize that good research can be conducted in many different ways. Good research requires common sense. With some training in documentation, participatory/observational techniques, case study approaches, the use of audio/video taping systems, personal journals, record keeping, teachers in partnership with university faculty can bring about a renaissance of school based research which characterized the progressive era in education and contributed valuable ideas and practices for the education of children.

Conducting research without the full cooperation and collaboration of the person responsible for maintaining classroom life -- namely the teacher -- is impossible. Teacher and student interpretations of the meanings of events must be obtained. Natural classroom settings must be maintained even though a vast array of variables is studied. Alternative approaches to educational research must reflect collaborative relationships among teachers and researchers, if research outcomes are to be perceived as relevant and useful by practitioners and improvements in education are actually to occur (Clark, 1976; Elliott, 1977; Krathwohl, 1974; McLaughlin and Marsh, 1978; and Tickunoff, Ward, and Griffin, 1979). Such working relationships are epitomized in collaborative action research.

COLLABORATIVE ACTION RESEARCH

Collaborative action research is characterized by several elements:

1. Research problems are mutually defined by practitioners and researchers.
2. University faculty and classroom teacher collaborate in seeking solutions to practitioner's problems.
3. Research findings are used and modified in solving problems.
4. Practitioners develop research competencies, skills, and knowledge, and researchers reeducate themselves in field based and naturalistic research methodologies.

5. Practitioners as a result of participating in the adaptation process are more able to solve their own problems and renew themselves professionally.
6. Practitioners and researchers co-author research reports.

Collaborative action research liberates teachers' creative potential, stimulates their abilities to investigate their situations, and mobilizes human resources to solve educational problems. As a collaborative process action research begins when researchers, university faculty, and teachers assist each other in developing the skills to identify and conceptualize problems.

> Collaborative action research is a process in which teachers and researchers work with parity and assume equal responsibility to identify, inquire into, and resolve the problems of classroom teachers. Such collaboration recognizes and utilizes the unique insights and skills provided by each participant while, at the same time, demanding that no set of capabilities is assigned a superior status. It assumes a work with rather than a work on posture — the latter being more frequently the modus operandi when teachers are asked to join researchers in a linear r and d endeavor (Tickunoff, Ward, and Griffin, 1979, 10).

The work on posture, which has characterized traditional experimental research, can be described as a technological process responsive to the catalytic action of educational researchers who keep the locus of decisions outside the school and away from teachers. This approach prevents teachers and the school from becoming the subject of their own transformation. Freire (1973) insists that methodological failings can always be traced to ideological errors. There is an implicit ideology of paternalism, social control, and non-reciprocity between experts and "helpees" which underlies traditional experimental research. (In the traditional research study one finds "subjects" interesting language which suggests that someone must be the "ruler" or the manipulator.) If one is to adopt the collaborative action research model which fosters dialogue and reciprocity, one must first be ideologically committed to equality, to the abolition of privilege, and to non-elitist forms of research leadership wherein special qualifications may be exercised but are not perpetuated.

Collaborative action research focuses on the involvement of those who are traditionally "researched" in the identification of problems, the formulation and collection of data, the interpretation of information, and the application of findings to solving problems. Collaborative action research answers the question of who has the right to create knowledge by arguing that the expected beneficiaries of research should design and carry out their own research. There are three assumptions underlying this approach: 1) parity in decision-making among researchers, trainers/developers, and practitioners; 2) respect for the unique perspective of each constituency; and 3) equal assumption of responsibility among each participant in the collaborative research and theory development process (Mergendoller, 1979).

A collaborative research process can be of immediate and direct benefit to a school and its constituents. It is important that the school and the community gain not only from the results of research, but from the process itself. This means, for example, that teachers, students, and members of the community — as a result of participating in the research process will be able to articulate problems themselves and to initiate processes to find solutions. The funamental principle of collaborative participatory research and its point of most radical departure from orthodox research is that the research process is based on a system of discussion, investigation, and analysis in which the researched are as much a part of the process as the researcher. Theories are neither developed beforehand to be tested, nor drawn by the researcher from his or her involvement with reality. Reality is described by the process through which a school, a community, and its teachers, parents, and children develop their own theories and solutions about themselves and their situations (Hall, 1977).

The tradition of the research establishment is hard to change. Too easily, teachers become consultants to rather than full participants in the research process. Too easily, the researcher becomes the sole originator of the research while the practitioner becomes simply the object of study rather than an investigator as well. If teachers are to be full partners in research, they must be coinvestigators who share with researchers the responsibility for the design and execution of the research and for the interpretation and dissemination of the results (Gajewski, 1978).

Teachers participating in collaborative action research become agents of their own change. Teachers can use action research to grow personally and professionally, developing skills and competencies which empower them to solve problems and improve educational practice. This can be done without formal staff development activities. Moreover, not only do teachers identify practical theories that apply to their own idiosyncratic settings but they are also able to formulate these practical theories as general hypotheses which have the potential for universal applicability.

Action research yields its own findings regarding the effectiveness of different research based strategies in different situations with different pools of available resources, and for different kinds of content. As Massanari (1978) suggests, "such findings should be collected, synthesized, and disseminated to the education community. They would be valuable and needed contributions to the knowledge base that supports education personnel development. Publications such as 'What's Working Where' and 'What Didn't Work Here' would be welcomed by the education profession."

Collaborative action research requires the coordination of the publication and research interests of university faculty, the thesis research of graduate students, the term paper requirements of graduate and undergraduate students, with the problem solving and inservice training needs of teachers. Collaborative action research offers the opportunity for intensive involvement between researcher and practitioner; it offers mutual sharing and stimulation of curriculum development, teaching, and measurement problems and the sense of participating in intellectually coordinated research on "large" educational problems (at least as contrasted to the more typical thesis and term paper topic). Most important, collaborative action research is substantial professional inquiry and scholarship in its scope, its epistemology, and its outcome. A practitioner with this orientation and skill in action research is no longer static or dependent on others for professional progress. The practitioner's own professional growth and competence is enhanced. Not only are practitioners likely to feel professionally alive, they may also feel effective — in that they can do something about their profession. If action research meets these goals then we are really describing a generic process of inquiry and growth for the education profession (Mosher, 1974, 87).

University faculty, graduate students, and teachers can be trained in the collaborative process so they can produce knowledge from practice. The intellectual and professional process of producing new knowledge about problems in teaching, curriculum, and school change is the raison d'etre of action research. The issue here is that of tension between *means* (curriculum development or educational change) and an *end*, i.e., knowledge from and for practice and the training of people able to inquire professionally in this way about a wide range of issues in education. Producing knowledge from practice results from an alternating cycle of reflection and action, hard thinking, careful practice and evaluation designed to generate a more comprehensive understanding of educational problems and their possible solutions (Mosher, 1974).

Collaborative action research is service, a process of concurrently inquiring about problems in education and acting on them. It assumes that educational practice is the first business of education, that there is a generic need to improve educational practice, and that the improvement of educational practice requires the confrontation of real problems in the school by conceiving alternatives and testing them out. Practice then becomes the crucible for innovation, an obtrusive measure of assumptions, speculations, and theories.

There is great promise in the pursuit of practical inquiry with the collaboration and mutual support of researchers and practitioners who together contribute to the solution of classroom problems and to the improvement of educational practice. The idea of such collaborative efforts was articulated by Schaefer (1967) in his book, The School as a Center of Inquiry, and demonstrated in the 1940s by Stephen Corey and others at Teachers College, Columbia University in action research projects which brought together teachers and professors primarily for curriculum development purposes.

Teacher oriented inquiry and the view of the school and the classroom as the proper focus of research action will come about when researchers and teachers change their attitudes and perceptions about inquiry and research. McKenna (1978, 2) speaks clearly to this point:

> . . . many researchers will have to revise their posture that scholars mustn't get their hands dirty with the clay; that the potting must be done by others, once the scholars have pre-

> scribed the clay mix and kiln temperature. More specifically, the attitude that you can't learn much in the 'messy' situation of the ordinary classroom will need to be replaced with one that accepts real schools as the most appropriate places for conducting research and development. And researchers will need to come to recognize teachers as peers, as colleagues, who have much to contribute to improving the R&D process, from identifying researchable issues, determining research design, data gathering and analysis, to planning programs based on findings. Once these are accomplished, new strategies for conducting research may need to be devised and tested in order to inquire into the multidimensional problems that are identified for study.
>
> Teachers on their part will need to reconceptualize their roles to include involvement in inquiry and problem solving on instructional issues. And they will need to gain confidence in their ability to contribute on a parity basis to the research and development process.

The integration of research and service through collaborative action research can help our schools become centers of inquiry where university faculty and professional teachers inquire systematically on such fundamental issues of what is to be taught, how, by whom, where and with what outcomes for students. The process of systematic inquiry constitutes effective and meaningful professional development. Significant learning and growth occur when teachers and university researchers work together in carrying out research to solve problems that concern themselves and the schools.

The school is the best laboratory for research. In one school building there probably are more real researchable problems deserving the support and attention of funding agencies than one would imagine. Jackson (1968) says that the classroom teacher typically engages in as many as 1,000 interpersonal exchanges during the course of a six-hour day, frequently averaging 200-300 interpersonal transactions per hour. This observation in itself testifies to the complexity and immediacy of the daily situation in which every teacher is forced to make decisions. A single school is a research goldmine in terms of important questions, variety and richness of data, and numbers of potential researchers. Educational research must be fashioned from the fabric of the questions and problems of the school. The practical orientation of the school provides a research perspective that fits the unique and rich character of educational problems. The dominant chord of school and classroom oriented research supplants the ethos of knowledge for the sake of knowledge, with inquiry that generates usuable knowledge which spawns decision and action.

Paradoxically, it is the knowledge generated from practice that will enrich our conceptual understandings and educational theory. The action, reflection, teaching, evaluation cycle feeds on itself epistemologically. Collaborative action research adds to both conceptualizing and practice by validating one against the other (Mosher, 1974). "To suggest that theoretical and practical research can be conceived as thesis and antithesis enables the possibility of synthesis. It runs the risk, admittedly, of oversimplification; but surely there must be hope for productive combinations of practical and theoretic orientations" (Schubert, 1980, 23).

THE TOOLS OF COLLABORATIVE ACTION RESEARCH

Documentation

The fundamental tool of collaborative action research is documentation. Documentation is a way of monitoring, observing, and defining what takes place in ongoing processes, (Ianni, 1978). It subsumes an entire gamut of activities concerned with information (Mertens and Yarger, 1979). These include:

Collecting Information
Generating Information
Organizing Information
Synthesizing Information
Analyzing Information
Explaining Information
Using Information
Disseminating Information

The purpose of documentation is to develop an ongoing record, an ongoing process, and finally a continuous form of assessment for programs. Documentation is the *sine qua non* for evaluation and action research. The only adequate way of describing what takes place in any social or behavioral situation, is to be there, to be a participant, to observe continuously and to become intellectually and emotionally involved in what takes place. Action research requires that a field perspective be taken rather than a laboratory perspective. Educational research is traditionally a process by which pre-existing ideas are vindicated or validated. It is imperative in action research that teachers and university faculty researchers, even though objective, should be involved in the process and milieu of the classroom and give feedback which allows individuals to change their programs — and even to change their objectives, when appropriate and possible. There is no lack of scientific rigor in such a position. Documentors can take a field-oriented approach; they can spend a great deal of time observing and still make objective value judgments. The field-oriented approach requires training and careful analytic work, but it can be done (Ianni, 1978).

An analytical process which is essential to documentation is adequate observation, and, far more important than the observation itself, the recording of those observations continuously — and immediately after the observation has been made. Documentors need to record their own impressions immediately after an event, in addition to using tape recorders during the observation.

Another important documentation approach is the use of questionnaires, surveys, and other devices aimed at recording perceptions, ideas, questions, concerns, and trepidations — everything that takes place in a program — from as many teachers, students, and staff members as possible. Documentation is a laborious process and ought to be a shared and collective responsibility. There is simply no way in which one can describe documentation as anything but a great deal of work but work which has an important payoff at the end.

Documentation helps to establish the best strategies for action research and program development when it is used to develop a series of case histories or clinical studies to look at the same processes in education in a number of different settings. One of the great recurring problems in educational efforts is the tendency for programs and projects not to inform or reinforce each other. Consequently, each project, each new program, tends to begin as if nothing had ever occurred before. As a result, it is impossible to make any kind of judgment based upon more than one case.

Documentation is for making value judgments. There is no way to avoid it. What documentation does, however, is to allow educators and other professionals to underwrite and to validate what is taking place in a particular program. Values are of tremendous importance. Documentation should not be viewed as simply a matter of collecting and keeping sterile quantitative records. The qualitative issues — the values that are inherent in a program — can only be described through adequate documentation (Ianni, 1978).

Documentation can be regarded as a phenomenological tool for it records perceived reality as well as objective reality, it records feelings and personal experiencing and through documentation we can describe and interpret teachers' and students' intentionality, probe the realms of their lived experience, and explore the boundaries of their awareness that form their horizons in the classroom and in the school. Documenting feelings, personal experiencing, and perceptions helps to define action research as "soul" research — research which captures the pulse, the vitality, and the fibrous nature of life in the classroom.

Retrospection

One of the ways in which documentation can be used to explore the phenomena of the classroom and the school is through retrospective studies of curriculum development. In classroom situations, one finds five commonplaces (Schwab, 1975); teachers, students, subject matter, curriculum decisions or policy, and milieu or psychosocial and material environment. The interactive impact of these forces, in fact, constitutes the curriculum. Curriculum, used in this way, is the central focus of educational research (Schubert, 1980). Wise (1977) argues that if developing good curricula is a central concern than personal accounts of such attempts should be emphasized in professional discussions, and a literature of accounts of curriculum practice is necessary for training new curriculum specialists. Retrospection is, therefore, a legitimate form of inquiry into curriculum development practice. Productive forms of personal inquiry into curriculum development include case studies (Walker, 1975), historical study through documentation analysis (AIRPD, 1971), and retrospective accounts (Wisner, 1975; Purves, 1975; Regan, 1971; Wooton, 1965). As a form of inquiry retrospection is unique including both introspection and observation as sources of data.

Retrospective accounts of curriculum development offer "our most precious source of knowledge about our field — our own experience" (Wise, 1977). Such accounts recognize curriculum development as a personal, human, particular, and often episodic process. It is the human particulars of curriculum development which make practice what it is, and it is those particulars with which the field is out of touch (Wise, 1977; Kaplan, 1964; Schwab, 1970).

Retrospective studies grasp the contexts, nuances, personal realities, and situational specifics of what happens when a teacher tries to implement new ideas and approaches. As personal accounts they describe logic as demonstrated in classrooms, as opposed to reconstructed logic -- the manner in which personal experiences are presented as knowledge (Kaplan, 1964). Curriculum theorists (Wise, 1977; Schwab, 1970; Walker, 1975; Fox, 1971; Eisner, 1975) indicate that the major problem of curriculum theory is that personal experiences have been reconstructed into a knowledge which does not reflect actual practice. The aim of retrospective accounts is to capture the practical sense and concrete reality of the classroom world, and to share these with colleagues. Summarizing the case for retrospective studies as a form of action research, Wise (1977, 14) observes that:

> Our literature about curriculum development does not now indicate much in the way of accumulated practical sense. We do not have a rich store of studied and catalogued accounts of curriculum development practice in which what happened and how well it happened are presented. We do not recount for others the problems we faced in development, the problems solved, the solutions discovered, the

> solutions failed. We do not recapture and report strategies of thinking that have led us to good decisions. We do not distill from our experience what manners of imagination, judgment, arguments or brainstorming helped or hindered our work. We ought to be reflecting on our experiences in curriculum development, recounting them to ourselves, analyzing them, and presenting their accounts to our colleagues in a form that helps them to understand the significance of the experience, the lessons of the experience.

The Case Study

The history of the social sciences is filled with dramatic conceptual "breakthroughs" which have emanated from the use of the case study. The ideas of Freud, Piaget, Maslow, Erickson, Jung, Adler, and Rogers are examples of profound influential ideas which were born and nurtured through the case study approach. The case study is a congenial approach for the person of action, for the person who engages life, who tries out ideas, reflects on their implementation, and tries again. The cycle of thought-action-thought finds comfortable embrace in the case study, a basic methodology for action research.

The case study is the traditional approach of all clinical research and lends itself extremely well to action research. It is the preferred method of the practitioner who is concerned with complex interrelationships among many variables and whose subject matter (i.e., the clinical situation involving human beings) makes experimental manipulation difficult and often impossible (Bolgar, 1965).

When an inquirer approaches a new area in which relatively little is known, the case study is the first methodological choice (Bolgar,

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1965). The true power of the case study lies in its ability to generate hypotheses and discoveries, its focus on the individual or an event, its flexibility, and its applicability to natural settings. The procedural requirements for a case study lend themselves to the solution of problems relevant to teacher-student interactions. Case studies can assist in the identification of educationally relevant variables, and the conditions under which they are effective. Case studies are intended for natural settings and contain data collection procedures that can assist teachers in their decision making. The collection of data and the procedures required for case studies are compatible with instructional purposes. The inherently flexible nature of the case study approach, the search to identify sources of variability, and the requirements for data based feedback for decision making are all components necessary for the improvement of teaching and the design of situation specific programs.

The great strength of the case study approach is its ability to describe in a holistic way the program "treatment" and its effects on students; it does not simply focus on narrowly defined outcome variables, but instead it includes much descriptive information. The case study synthesizes vast amounts of information about individuals and about the instructional program and presents it in a form that can be interesting and easily understood. Information sources including background data, test scores, affective measures, self reports, peer reports, staff reports, parent observations, student products, anecdotal data, and evaluator observations, are considered essential for the case study. Of special importance is the development of chronological case histories in which data are collected at different points in time. The integration and cross validation of this information adds strength to the final case study report.

Direct contact and extended observation of the students themselves are often necessary to reach conclusions related to variables involving the academic and affective behaviors of children. Through the case study one can not only examine pre and post test data, but also the intervening events, forces, and activities affecting the life of each student, and the interventions which do or do not influence cognitive and affective changes. Studies of this kind are needed to investigate the developmental histories of different student populations targeted by Teacher Corps and other innovative programs in relation to a particular project's objectives.

In a profession where there is a basic commitment to the teaching and understanding of individual students, it is ironic that research devoted to the full study of individuals is so rare. The full study of individuals enables teachers and university faculty to function as clinical researchers. This is an excellent way to examine the wide range of contextual and multidimensioned variables which impinge on student development, and provides a sound action research base for generating new hypotheses about student learning and growth. The case study is a powerful research methodology for sparking interplay between thought and action, helping to develop increased capacities of analysis which make educational change actions possible.

THE CONDITIONS FOR COLLABORATIVE ACTION RESEARCH

Climate

In establishing a foundation for collaborative action research, modest beginnings are no disgrace, and are in most respects preferable. The visibility and impact of early efforts may be small, but it is advisable to consider carefully the relative merits of simple versus more intricate research plans and data analysis procedures. It is likely that by adopting the strategies of a methodological miser, there is more to be gained than lost. In the conduct of action research, just as in the interpretation of its results, the law of parsimony is recommended (Siebert, 1980). Modest beginnings can serve to build, step-by-step, an action research tradition of dealing with real problems that already have a natural and interested audience.

By selecting and pursuing questions which focus on the immediate and imperative problems of the classroom and the school, collaborative action research can attract the greatest attention at the most opportune time (when there is something substantial to report), for the best reason (because some progress has been made, either in terms of increased understanding or solutions to problems) and probably from the right audience (those who have a pre-existing interest in the problem and its solution).

A mounting record of visible accomplishment is an excellent way to dispel the initial anxiety teachers may experience in undertaking action research.

It is helpful not simply to be alert to questions that are disturbing to practitioners, but also for teachers to get to know colleagues who can help to advance the developing research effort. Particular colleagues may be valuable because they are especially sensitive to emerging problems, because they are creative and have ideas about how educational problems might be solved, because they are skilled in problem definition, or for a variety of other reasons.

Conditions in the School

There are certain necessary conditions which need to be built into the working environment of the schools if teachers are going to function as researchers in partnership with university researchers.

(1) Time needs to be made available as part of the teacher's regular teaching load for discussion, reflection, investigation, and speculation.

(2) An atmosphere is required in which teachers have the freedom to identify and initiate their own problems for inquiry, to express their ideas and develop their ideas into hypotheses, and to share and defend their ideas with administrators and colleagues.

(3) Technical assistance and support and consulting services ought to be provided when necessary to help teachers (and university faculty) learn field-based research processes.

(4) Reasonable material support for carrying out research should be available.

(5) University credit, staff development credit, or inservice credit should be given to teachers for conducting research if they desire it.

Requirements of Teachers

Teachers must be willing to have other adults in the classroom and to see this as a positive factor not interfering with teaching and learning. It is helpful if participating teachers have abilities to describe and analyze aspects of not only their students behavior but also their own behavior. Teachers who have not thought about classroom teaching and learning in such rational ways may need time to explore these aspects of their classrooms prior to entering the collaborative action research process. Teachers need to consider how to restructure their time since action research may require time away from the classroom. Teachers need documentation and observation skills; they need to be familiar with data collection strategies so they can participate in such decisions; they need to feel comfortable with analyzing and interpreting data, drawing conclusions, and writing actions of the study.

Requirements of University Faculty

University faculty members of the action research team may also need to be reeducated to learn to recognize and exploit the naturalistic dimensions of school-based action research. Gaining access to what teachers know about the classroom requires that university researchers have interpretive skill, patience, and the ability to ask the right questions in the right manner. The researcher gains such access through professional relationships that are based on privileged conditions (Emery and Trist, 1973). Teachers' willingness to share ideas, open up their classrooms, critique and try out research strategies, and discuss and interpret findings with the researcher are vital to action research. The researcher wins these conditions by honoring, respecting, and responding to the knowledge and skills of other action research team members and proving his or her competence in providing some kind of unique service to the team. The university researcher must be an unusual person — one who is acceptable and comfortable in public schools, one who possesses interpersonal and group process skills, and a knowledge of research, and one who has the ability to capitalize upon unanticipated events, serendipitous opportunities, and unsettling insights (Tickunoff, Ward, and Griffin, 1979).

Collaborative Process

It is imperative that all members of the action research team be brought together initially to learn how to collaborate. This is seldom done. We gratuitously assume collaboration will happen if we bring people together as members of a task force or committee. It is essential to have people focus in right away on what collaboration is and what it demands. Teachers and university faculty need to be taught how to collaborate and deal with significant questions about the process. What is collaboration? What does it involve? What does it cost? What are its risks? What are its benefits? Am I ready to pay the costs and give up something to get the benefits which accrue from collaboration? How do we help each other in the process? What are the ground rules for making decisions? Collaboration is a dialectical and dialogical process with a lot of give and take and its use in action research requires that university faculty and classroom teachers build trust, communicate and solve problems together from the beginning. Action researchers need to prepare themselves for dealing with the conflicts which naturally emanate from the interface of the different norms, behavioral regularities, and values of the university and the school. Collaboration is not achieved naturally. It is a sophisticated process which must be taught and learned deliberately.

Attitudinal Change

Collaborative action research possibilities in field-based teacher education are endless. University faculty need to recognize that their personal, vested interests can be served by their active participation in field-based staff development as an effective entré into field-based research. The irony of the situation is that often university faculty who ostensibly have been trained to conduct research do not know how to carry out field-based research; they cannot do what they ought to do. Rather than viewing on-site teaching and consultation as inconsistent with career development, faculty need to see there is much to gain personally from working with schools and communities in researching the problems created by declining enrollments, in researching the staff development process, in researching the problems of accountability, collaboration, mainstreaming, and teacher burnout. The opportunities for research in the field, particularly in relation to staff development, are limited only by the imagination. First it may be necessary to provide staff development for the staff developers, so that university faculty can do what is often claimed they do better than anyone else -- conduct research. A Dean in a state university offers this advice to faculty:

> Long term systematic approaches to inservice education offer university faculty and classroom teachers the time and place to exploit natural problem situations for action research. Begin with problems confronting teachers in the classroom and help them to become researchers to solve their own problems. Work with them, formulate hypotheses, test them out in the classroom, and write them up. Everyone should publish. Create your own in-house journal — mimeograph papers — circulate them among faculty colleagues, teachers, and parents in the community. Function as teams of inquirers and problem solvers. Bring inservice and preservice teachers and university faculty together as research teams. Encourage them to investigate problems regarding individualization, class size, mainstreaming, classroom management, school climate, reading, creativity. Isn't it absurd that concurrently in one university teacher education program preservice students will be writing term papers, inservice teachers will be writing term papers or preparing projects

for a graduate course or workshop, and some university faculty will be writing manuscripts — all in anonymous isolation from each other. What excitement there would be and what quality action research would result if we could assemble these people, create action research teams, identify real problems, and have these teams do some real blood and guts problem solving. We would break down the fragmented approach to teacher education, integrate preservice and inservice education, and produce usable knowledge. This is the best kind of staff development.

Collaborative Action Research: A Proposal

By clustering graduate teacher interns, undergraduate students, graduate students in, for example, administration, counseling, reading, and early childhood, and university supervisors in selected school sites local districts would have a critical mass of resources to work with in creating staff development and action research programs by redirecting existing resources, consolidating resources, and discovering mutually benefiting resources.

For the sake of an example, imagine a university and a local school district entering a partnership to establish a teacher center. The university and the school district are able to work out arrangements so that the following kinds of university students can be placed in the school district:

1 or 2 post master's degree students in educational administration and supervision
2 master's degree students in administration
3 master's degree students in counseling
3 master's degree students in reading
An early childhood team of two master's degree students who could staff an early childhood learning center (full year)

AND

10 master's degree teaching interns (full year)

IN ADDITION

15-20 undergraduate degree students who were exploring teaching and
1 or 2 university faculty assigned as on-site supervisors with
additional faculty coming in to supervise students

A school district would then have approximately 35-40 people available as additional resources.

There are endless possibilities with this kind of critical mass available to serve the interests and needs of all parties concerned.

After two or three months of the internship, teaching interns could begin to substitute for some classroom teachers so that regular staff could begin to have one or two days a week of time to:

1) plan and develop curriculum materials
2) visit and observe teachers in other classes. Teachers could become interns again - interning with each other
3) revise curriculum
4) participate in workshops or take courses
5) participate in conferences and case studies of individual students
6) design and plan approaches to individualize instruction
7) meet with colleagues in a relaxed atmosphere to share ideas
8) assume responsibilities for staff development activities

Interns could release a cadre of experienced, knowledgeable, and extremely competent teachers to help supervise and assist the less knowledgeable, the less experienced, and the less able members of a teaching staff. (Teachers teaching teachers.) This could prove to be one of the most effective means for addressing the problems of supervision.

Counseling and reading interns could provide support services for meeting the special emotional and intellectual needs of students.

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Post master's administration interns could take on specific substantial administrative assignments and problems of the kind which would alleviate administrators of some burdens.

Master's degree students in administration could collect data and write up reports dealing with administrative matters.

Undergraduate students in the exploring teaching component of the university's teacher education program could provide tutorial help to children and offer individual attention to children who need it.

Through the cluster placement of interns, superintendents and principals would have additional resources which would enable them to gain flexibility in staffing and offer increased opportunities for differentiated staffing, individualization of instruction, and staff and curriculum development.

An on-site university supervisor could offer a course or a series of workshops for school staff. Working together school staff and interns could collect data for ongoing needs assessments, school census reports, and for the evaluation of programs. A library of instructional modules, reports, curriculum materials, assessment tools, and other resources could be developed.

Action research teams consisting of undergraduate students, interns, classroom teachers, and university faculty could be formed. These teams would identify specific problems to be researched. Decisions would be made and responsibilities assumed for literature searches, documentation, observation, evaluation, data interpretation, and implementation of alternative problem solutions. Results of the action research would be written up, co-authored by teacher education students, teachers, and university faculty. A series of action research reports would be mimeographed and disseminated to teachers, students, and university faculty. Reports could be submitted to professional journals for publication.

The interests and needs of the university would be well served. Interns would have meaningful learning experiences to test and apply theory, to acquire and extend professional competencies, to learn and grow in the real world of education. University faculty would interface more frequently with practitioners on the front line of education and in the crucible of the real world of teaching, expand their perspectives on the teaching and learning process, and generate new hypotheses for research. The sites that would be available for the cluster assignments of interns would offer a wide range of experiences and would make university supervision more efficient.

Such centers would become more than teaching centers -- they would truly be centers of inquiry -- places where administrators, teachers, interns, and university faculty could share ideas and grow together through a sustained program of collaborative action research. What is required for the integration of research and service are imagination and will.

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Teachers Life/Age Cycles and Stages of Cognitive-Structural Development

ARCS Report VII

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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT VIII

REVIEW OF THE LITERATURE: TEACHERS LIFE/AGE CYCLES AND STAGES OF COGNITIVE-STRUCTURAL DEVELOPMENT

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REVIEW OF THE LITERATURE: TEACHERS LIFE/AGE CYCLES AND STAGES OF COGNITIVE-STRUCTURAL DEVELOPMENT

Recently, large numbers of psychologists have begun to draw upon developmental perspectives to aid in their study of personality. Various developmental theories -- describing predictable sequences of growth, adaptation, transformation and change in humans -- are employed to this end. While much of the work in this area has focused on the role of such developmental processes in personality development among children, more attention has recently been paid to such processes in adulthood.

Research suggests that there is wide variation in developmental levels among adults. Adulthood appears to be a time in which such processes as the reworking of identity and the differentiation and hierarchical integration of personality and thought, have an influential role to play. Theories of adult development describe adults as capable of movement toward greater maturity, with this movement taking place in a predictable and orderly fashion analogous to the biological/ maturational processes of development we observe in childhood.

Unique to adult development is the fact that biological/maturational events play little or no role. Adult development is paced by cultural and societal expectations as well as by personal values and aspirations. Two broad perspectives can be identified on the issue of what prompts developmental growth in adulthood. Life Age/Cycle theorists focus on predictable life events as pacers for development. Such tasks as establishing and maintaining social and interpersonal roles as well as dealing with essential intrapsychic tasks provide the impetus for change, and sometimes growth, in adults. Cognitive Developmental theorists, on the other hand, focus on particular cognitive/emotional perspectives distinctive to different stages of development. The events that may prompt development will vary according to the perspective a person currently holds. Life Age/Cycle theorists describe transitions and adaptations to life events; cognitive developmental theorists describe transformations in adults' ways of constructing experience (Weathersby & Tarule, 1980). The cognitive developmental theorists do not consider maturity to consist of successful adaptation to societal expectations. Instead, they say:

> Maturity may be seen as a developmental process of movement through the adult years toward meaning perspectives that are progressively more inclusive, discriminating and more integrative of experience. In ascending this gradient toward fuller maturity, we move, if we can, toward perspectives that are more universal, and better able to deal with abstract relationships, that more clearly identify psycho-cultural assumptions shaping our actions and causing our needs, that provide criteria for more principled value judgments, enhance our sense of agency or control and give us a clearer meaning and sense of direction in our lives.
>
> (Mezirow, 1978)

In the remainder of this review we will examine the contributions of such theorists to our understanding of adult development. Our goal in examining this literature is to gather relevant information for those working in staff development programs with teachers. Specifically, we will be seeking to ascertain what is known about the needs of individuals at various stages of development as well as how such developmental differences influence teaching behavior.

Ultimately, we are interested in how institutional environments interact with stages of development as well as whether, and how, interventions designed to foster developmental growth impact teaching performance. Could current problems such as teacher burnout and teacher dropout be due to a lack of fit between particular teaching environments and particular stages of development? Can institutions be adapted to meet the developmental needs of teachers? Is it possible to design and implement staff development programs that foster individual growth and development and lead to improvements in teaching? We will not attempt to answer these questions in this review. Our goal instead is to examine the literature for research findings relevant to such issues.

Developmental Tasks

In describing development in childhood many theorists, such as Freud and Gessell, focus on biological/maturational changes that prompt development. Such a perspective is, of course, of limited use in examining developmental issues among adults. Pioneers in the study of adult development have chosen instead to focus on "life events" as prompts for development. Such relatively predictable events as the selection of social and interpersonal roles, the performance of adult tasks and the adoption of necessary coping behaviors are posited as pacers for adult development. Among theorists taking this functional view of development, one group focuses primarily on age-related tasks (Levinson, et al., 1974, 1978; Gould, 1972, 1978; Sheehy, 1974, 1976; Havighurst, 1972) while the second focuses on tasks related to the central issues of different phases of the life cycle (Erikson, 1959; Neugarten, 1963. 1970).

The work of the Life-Age theorists suggests that there are distinctive age-related tasks posed for adults. From the early 20s until 27-29 the young adult is making initial commitments to a job or career, interpersonal relationships as well as a life style and interests. Levinson describes the work undertaken during this period as a process of developing a perspective on oneself as an adult. The outcome of this process is the formation of a "life structure" and development in adulthood is viewed as a series of orderly transformations of this "life structure." In the course of development an individual cycles between periods of transition -- characterized by a questioning of previous commitments made -- and periods of stability, as one settles into the newly transformed life structure. Following the formation of initial commitments in the 20s, comes the transitional "age 30 crisis" where these initial commitments are reassessed and affirmed or rejected. The remainder of the 30s is a period of stability, with a focus on achievement and becoming one's own person. Around age 40 another transition period is ushered in by the realization that time is limited. Priorities and values are reexamined and the individual enters the late 40s and 50s, hopefully having achieved a satisfactory fit between the life structure s/he has created and the concrete tasks remaining to be performed. The work of Levinson as well as that of Gould and Sheehy is summarized in Table 1.

The work of these theorists has been criticized on various grounds. Their accounts are based on clinical/biographical data from small samples. The samples employed by Levinson and Gould consist primarily of white middle class males. We must wonder whether the life pattern exhibited by these individuals can provide a schema of development which will adequately describe the experience of those from different ethnic and so-

TABLE 1 — DEVELOPMENTAL TASKS

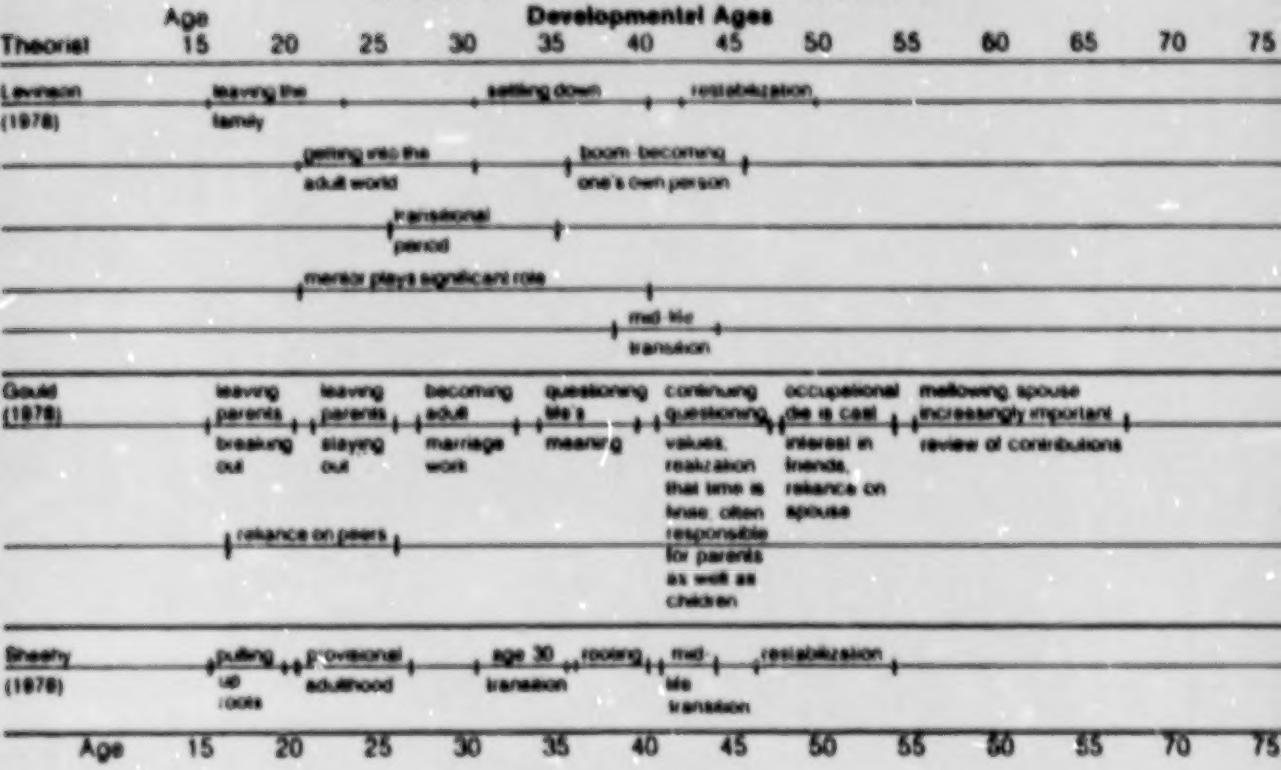

Table from: Oja, S. N. Adult Development Is Implicit in Staff Development. Journal of Staff Development, Vol. 1, No. 2, October, 1980.

cial backgrounds. Neither do the schemes provide a good fit to the lives of most women.

Such theories must also come to terms with the changes in social and cultural norms that have taken place over the past ten-fifteen years. Such changes may indeed have altered the character of marker events -- individuals frequently foresee multiple careers, marriages and life styles over the course of their lives. At the very least they have altered the significance of the timing of such events; there is far greater variability in such timing today than existed twenty years ago. Some investigators have suggested that we are becoming an age-irrelevant society (Neugarten, 1980). If this is so, then a model which links development to age-related tasks will fail to describe most individuals in our society. A recent study in which independent judges rated structured interviews for age-related content, found that the Life-Age scheme did not provide a very good fit (Kummerow, 1977).

The Life-Age approach has been applied to adult education in the work of Robert Havighurst (Havighurst, 1972). Havighurst has identified adult tasks important for different age groups and argues that an understanding of these tasks can aid in the assessment of "readiness to learn" among different adult groups. Educators have advocated using these developmental tasks as an organizing principle for adult education programs and as a basis for grouping learners (Knowles, 1970). A recent study investigated the importance of Havighurst's developmental tasks for adults of different ages, income levels and sex. While the tasks were rated as important by individuals in the study, certain groups -- female adults, middle income adults and older adults -- rated the tasks as more important than did other groups. In addition, participants' responses did not support the view that these tasks were age-related. With the exception of older adults, participants rated the tasks characteristic of other age groups as being of greater importance than the tasks characteristic of their own age group (Merriam & Mullins, 1981). Such results suggest that we should be cautious in employing such schemes of tasks in the design of educational programs for adults. Nevertheless, these theories do succeed in making the point that the negotiation of certain life tasks may indeed have a significant impact upon the functioning of the individual. An awareness of the impact of such events and a sensitivity to the needs of individuals at such times could be valuable aids to individuals working in the field of staff development.

The Life-Cycle theorists take a somewhat more global view of the developmental process. Building upon Erikson's account of the life cycle, they posit psychosocial stages of development. At each stage the individual must struggle with issues concerning his/her orientation to self and the social world. In Erikson's theory the issues important in late adolescence and early adulthood include: Identity vs. Role Confusion; Intimacy vs. Isolation; Generativity vs. Self-Absorption and Integrity vs. Despair. At any particular stage further development may be hindered by the failure to have resolved the issues of earlier stages (Erikson, 1959).

Bernice Neugarten has employed Erikson's theory in investigating adult development while focusing on the role of timing of life events. She contends that what precipitates adaptational crises is not the event itself, nor the age at which the event occurs, but whether the events are regarded as "on-time" or "off-time." Off-time events are more likely to produce crises as they have not been anticipated and rehearsed (Neugarten, 1970).

The developmental tasks identified by Erikson appear to involve issues we all must face. Sharing with and caring for other people, concern for future generations and for making the world a better place in which to live are values fundamental to Western culture. Furthermore, the establishment of ego identity -- a conscious sense of individual identity -- appears to be a prerequisite for psychological health.

These theories also have implications for individuals interested in staff development. Teachers in such programs may require aid in confronting "off-time" events as well as support in working through or reworking the issues of identity, intimacy, generativity and integrity. An awareness of these issues and the roles they play in the life of individuals may help to broaden the focus of staff development programs.

Developmental Stage Theories

Rather than focusing on the tasks each individual faces in the course of his/her lifetime, stage theorists focus on underlying patterns of thought which, they claim, play a central role in determining the individual's approach to the world. Stage theorists posit more global, holistic determinants of experience than those highlighted by Life Age/Cycle theorists. Stage theorists, such as Piaget, Kohlberg, Loevinger and Hunt, maintain that human development, personality and character are the result of orderly changes in underlying cognitive and emotional structures.* Development involves progression through an invariant sequence of hierarchically organized stages. Each new stage incorporates and transforms the structures of the previous stages and paves the way for the next stage. Each stage provides a qualitatively different frame of reference through which one interprets and acts upon the world. The sequence of development progresses from simpler to more complex and differentiated modes of thought and functioning. The higher stages of development are said to represent more adequate modes of functioning in the sense that they include adopting multiple points of view, more empathic role taking; and more adquate problem solving (Oja, 1978, 1980; Witherell, 1978). Underlying these theories, therefore, is the assumption that development is a process of growth into maturity.** This developmental sequence is regarded as a determinant of behavior on a par with such determinants as heredity and situational and environmental factors (Loevinger, 1976).

Cognitive-developmental theorists provide several different frameworks for observing how individuals organize their worlds: Piaget focuses on cognitive processes or thought patterns (1960, 1972), Kohlberg on moral reasoning processes (1969, 1976), Loevinger on ego maturity processes (1966, 1970a, 1970b, 1976) and Hunt on conceptual processes (1966, 1975). Each of these frameworks is discussed separately in the sections that follow.

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*Recent research by Selman (1980) describes stages of interpersonal development, thus adding an important dimension to the stage theories and filling the gap between cognitive and emotional structures.

**Several of these theorists deny that implicit value systems underlie their ordering of stages. Loevinger asserts that higher functioning in terms of her system is not equivalent to good adjustment or positve mental health (Loevinger, 1976). Nevertheless, the temptation to associate "higher" and "better" in the systems appears to be hard to resist.

Cognitive Development

Developmental stage theories originate from Piaget's work on the intellectual and moral thought of children (Inhelder & Piaget, 1958; Piaget, 1965). Piaget describes developmental stages as phases of equilibrium among systems of thought organization or mental structures. Within a particular stage of development a characteristic system of mental structures will be employed in interpreting the world. Piaget identifies four such stages of cognitive development: sensorimotor, pre-operational or intuitive, concrete operational and formal operational. In the course of cognitive development the individual passes from lesser (sensori-motor) to higher (formal operational) phases of equilibrium, with the higher phases characterized by more complex levels of differentiation and integration.

Development arises from the interaction of the individual (subject) with his/her environment (objects). Such interaction involves the processes of assimlation and accommodation. Individuals attempt, in the first instance, to interpret their experience in terms of existing mental structures (assimilation). When existing mental structures fail to "fit" current experiences the structures are transformed and recombined (accommodation), so as to enable more adequate functioning. When a sufficient number of these structures have been accommodated, a point of equilibrium is reached in which the organized pattern of mental structures enables effective interaction with the world. Such equilibrium will be maintained until the individual is ready to progress to the next qualitatively distinctive stage.

In Piaget's original scheme, cognitive development was completed between the ages of 11 and 15 with the attainment of formal operations (Inhelder & Piaget, 1958). It is this movement to the stage of formal operations that enables the individual to deal with abstract problems, to deal with possibility as well as actuality. Attainment of formal operations should be accompanied by an increase in intellectual flexibility -- an ability to approach subject matter from multiple perspectives. The characteristics of formal thought thus appear to be related to mature adult thinking. But Piaget's theory presumably presents a picture of childhood and adolescent, not adult, development. Recent investigations suggest that cognitive development is not completed in adolescence. Many college students

-- estimates from 33-75% -- are unable to solve tasks requiring formal operations (Kohlberg & DeVries, 1971; McKinnon & Renner, 1971; Tomlinson-Keasey, 1972; Karplus, 1974; Arlin, 1975; King, 1977; Kuhn, et al., 1977). Research among adults suggests that even if formal operations have been attained, they may not be retained across the life span (see studies cited in Long, et al., 1979). While conflicting results and methodological problems abound in this area of research the findings thus far do challenge the traditional Piagetian account.

Piaget, in response to such criticisms, did acknowledge that there may be individual and social differences in the speed of development (Piaget, 1972). The attainment of formal operations, he said, is at least partly dependent upon the social environment, and therefore some individuals might not reach the final stage until they were 20. Complicating the picture further, he stated that diversification of aptitudes may play a role at this final stage; individuals might display formal reasoning only in a specialized, perhaps professional, context. Not only does this make measurement of the attainment of formal operations considerably more difficult, it also casts doubt on the concept of a "stage" of formal operations. It may be that a learning, rather than a developmental, account of formal reasoning is more appropriate to what is currently being described by Piaget.

However, if one chooses to retain the developmental perspective, this newer account implies that significant development can take place during adulthood. In the first place many adults have not yet attained the stage of formal operations. Furthermore, among those who have attained them in a narrow sphere, we should be able to observe a broadening of perspective as these abstract thought processes are applied to other spheres of life (Kohlberg, 1973).

Other lines of criticism of Piagetian theory have been pursued. Some researchers have been examining the question of whether formal operations represents the final stage of development. Arlin (1975) has posited a fifth stage -- that of problem finding -- for which the problem solving skills of the formal period are a necessary but not a sufficient foundation. Klaus Riegel has taken another approach, posing first the question of whether formal operational thinking characterizes the thought of mature adults. After answering in the negative, he posits a parallel development of dialectical thought -- creative, divergent thought which is accepting of contradictions. Attainment of formal operations, he claims, is not necessary for movement toward this dialectical, and more mature, mode of thought (Riegel, 1973). At least one researcher has shown that there is a significant difference in the extent of use of dialectical schema among college freshmen, seniors and faculty members (Basseches, 1980).

This new research has several implications for educators working with adults. In the first place taxonomies of instructional goals -- such as Bloom's -- can no longer be regarded as paradigmatic. Any scheme which assumes that college students or adults have attained formal operations is likely to encounter problems. The research also suggests that efforts need to be made to aid adults in the transition from concrete to formal modes of thought. And finally, research suggests that in some contexts an appropriate educational goal would be to foster development either beyond formal operations or to foster cognitive development of a different sort.

Moral Development

Kohlberg's theory of moral development identifies six stages of moral judgment representing different systems of thought employed by individuals in dealing with moral dilemmas (Rest, et al., 1969). These stages of moral development parallel Piaget's stages of cognitive development (see Table 2). Nevertheless, Kohlberg maintains that moral development is distinct from cognitive development, stating that a given cognitive stage is a necessary, but not sufficient, condition for the corresponding moral stage (Kohlberg, 1973).

Moral judgment stages encompass three levels of thinking in relation to moral dilemmas: the pre-conventional, conventional, and post-conventional levels. At the pre-conventional level, moral judgments are made on the basis of external threats of punishment (stage 1) or manipulation of others, "what's in it for me?" (stage 2). At the conventional level, a person makes moral judgments to please significant others (stage 3) or to obey formal rules and regulations (stage 4). At the post-conventional level, moral judgment is related to the rights of the individual in a society based on social contract in lawmaking (stage 5), or to an orientation to higher laws of individual conscience and universal ethical principles (stage 6).

Table 2

Stages of Development

Cognitive Development Piaget	Moral Development Kohlberg	Ego Development Loevinger	Conceptual Development Harvey, Hunt and Schroder
Sensori-Motor	Pre-Conventional		Unilateral Dependence
Preoperational (intuitive)	Stage 0 - Egocentric	Presocial/Symbiotic	
Concrete Operations I Categorical Classification	Stage 1 - Punishment - obedience orientation	Impulsive	
Concrete Operations II Reversible concrete thought	Stage 2 - Instrumental egoism and exchange	Self Protective	Negative Independence
Formal Operation I Relations involving the inverse of the reciprocal	Conventional		
	Stage 3 - Good boy approval-oriented	Conformist	Mutual Dependence
Formal Operations II Relations involving triads	Stage 4 - Authority role, and social-order-oriented	Self aware transition	
Formal Operations III Construction of all possible relations	Post-Conventional		
	Stage 5a - Social contract, utilitarian legalistic orientation	Conscientious	Interdependence
Systematic isolation of variables	Stage 5b - Higher law and conscience orientation		
Deductive hypotheses testing	Stage 6 - Moral principle orientation	Individualistic transition	
		Autonomous	
		Integrated	

Source: Chickering, Kohlberg, Oja

Up to stage 4, a person develops through the stages by a wider and more adequate process of perspective taking and understanding of the social system. But, to make the upward shift to post-conventional thinking, stage 5, a person needs more than an adequate perception of what the social system requires. Where there is movement to principled stages of thinking in adolescence or early adulthood, it is in relation to anticipated commitment. Each person has the freedom to make his/her own choices and, consequently, seeks to determine the moral terms or contracts which are important in terms of future commitments (Kohlberg, 1969, 1973). But the young adult's first experiences with initial commitment are not like the personal moral experiences of the adult who has "sustained responsibility for the welfare of others and has experienced irreversible moral choices" (Kohlberg, 1973). Kohlberg believes that fully principled thinking (stages 5 and 6) is usually not attainable until the late 20s. Moreover, adult responsibilities in themselves are not sufficient to develop principled moral thinking. Research shows that most adults, in fact, stabilize at stages 3 and 4, the conventional levels; only about 6-7% of various sample populations are principled thinkers (Kohlberg & DeVries, 1971).

Kohlberg, in 1973, revised his original model by positing an additional stage at the transition point between the conventional and the post-conventional level. Adolescents in stage 4 1/2 adopt an anti-establishment orientation involving a rejection of conventional morality (Kohlberg, 1973).

Kohlberg has stressed the educational implications of the cognitive-developmental approach in general, and his theory in particular (Kohlberg, 1971, 1972; Kohlberg & Turiel, 1971). The cognitive-developmental approach implies that the aim of education is the stimulation of the next step of development. This is achieved by 1) exposing the learner to thought one stage higher than they currently occupy and 2) inducing experiences of conflict in the application of the learner's current level of thought to problematic situations. Kohlberg and associates have outlined a program -- the moral discussion -- for implementing these goals (Turiel, 1966, 1969; Kohlberg & Turiel, 1971), although limitations of such programs have been pointed out (Aron, 1977).

Kohlberg's work has been criticized on several grounds. Kurtines and Greif (1974) point out: 1) the moral judgment scale lacks standardized procedures for administration and scoring; 2) the predictive validity of the moral development model is questionable as a clearly demonstrated relation between moral judgment and moral action is lacking; 3) construct validation of the scale and the model is inadequate.

Criticism of the lack of objectivity of the moral judgment interview has led to revisions in Kohlberg's scoring manual and the development of an objectively scored instrument assessing moral development (Kohlberg, 1978; Rest, et al., 1974; Rest, 1976). While it is true that a number of studies have demonstrated the lack of a one-to-one correspondence between moral judgment stage and behavior (Haan, et al., 1968; see other studies cited in Kurtines & Greif, 1974) Kohlberg has never claimed that such a relationship should exist. He has claimed, however, that moral stage progression is induced by disequilibrium, and a recent study failed to find evidence of such disequilibrium among those in transition (Wonderly & Kupfersmid, 1978). Finally, there is no clearcut evidence supporting the assumptions of the hierarchical nature and invariant sequencing of stages, and some evidence suggests these assumptions are incorrect (Holstein, 1976).

In reply, Kohlberg and associates point out that many of the criticisms are based upon the assumptions of a psychometric model of assessment, a model not appropriate to the task of assessing developmental stages (Kohlberg, unpublished). Furthermore, Kohlberg reasserts, he is not studying moral behavior but moral judgment. Moral behavior, he states, is situation specific, unstable over time and non-developmental. Moral behavior, therefore, can never serve as a criterion for moral judgment development (Kohlberg, unpublished). Such a disclaimer, however, calls into question the purpose of schemes to foster moral development.

Other criticisms have been directed to particular aspects of the theory. Several researchers have commented on problems in the conceptualization and measurement of moral judgment in the higher stages (stages 4, 5, 6) (Holstein, 1976; Gilligan, 1977; Murphy & Gilligan, 1980). The issue of sex bias in scoring of the moral judgment interview has been raised (Holstein, 1976; Gilligan, 1977). For instance, statements of responsibility and care in response to moral conflicts are observed more frequently in females than in males and such responses are typically categorized at lower levels (Gilligan, 1982).

The impact of recent work on post-formal thought is beginning to be seen among Kohlbergians. Murphy and Gilligan, in a recent paper, suggest that a cognitive shift toward dialectical thought may provide the basis for a new form of moral judgment in adulthood. Such thought is more relativistic and more contextual than those described by Kohlberg and, they maintain, more mature. Samples of such thought were rated as indicative of advanced intellectual and moral development using Perry's scheme (Perry, 1974) but were rated as indicative of moral regression when assessed by either of Kohlberg's scoring methods. This work suggests that a major revision of the model and the assessment techniques may be needed (Murphy & Gilligan, 1980).

Rest's Defining Issues Test (DIT) provides an alternative means of assessing moral judgment level according to the Kohlbergian model. The instrument has been employed extensively to demonstrate developmental trends in moral judgment. Rest and his associates consider the instrument to be a valid assessor of moral judgment level and offering support for Kohlberg's general model of moral development (Davison & Robbins, 1978; Rest, et al., 1978). However, other research suggests that the two measures of moral development are not interchangeable; each appears to index a different aspect of moral development (Froming & Cooper, 1977; Froming & McColgan, 1979; Bode & Page, 1978).

The DIT does represent an advance over the moral judgement interview in terms of standardization of administration and scoring. Scores on the instrument are reliable but, as with Kohlberg's method, there does not appear to be a linear relation between moral development level and moral behavior. Individuals at low and at high moral levels exhibit similar cheating behaviors in certain circumstances (Leming, 1978).

Studies carried out using the DIT suggest that a plateau is reached for moral development in early adulthood and/or after formal education has been completed (Rest, et al., 1978). Despite such evidence many researchers have suggested that carefully planned interventions might promote growth to higher, post-conventional stages (Bernier, 1976; Chickering, 1976; Lasker & Pinedo, 1976). Courses of instruction on Kohlbergian theory have been effective in raising scores on the instrument (Napier, 1979; Coder, 1975). These results are consistent with other studies showing that Kohlberg's moral discussion method is effective in inducing moral growth (Rest, 1974; Boyd, 1976; Lawrence, 1977; Kohlberg & Turiel, 1971; Blatt & Kohlberg, 1975). Coder (1975) found that a series of lectures on Kohlbergian theory was as effective in fostering moral judgment development in a group of adult church-goers as was discussion of Kohlbergian moral dilemmas.

The apparent effectiveness of such programs raises a host of questions. Can instruction in Kohlbergian theory produce "test-wise" individuals? If so, then the observed score movement may not be indicative of any moral judgment development. This issue has been investigated in two separate studies (McGeorge, 1975; Napier, 1979). They found that individuals were capable of "faking downward" but were unable to "fake upward." The treatments apparently impact more than just test taking behavior. However, the issue of the durability of such change bears further investigation.

Several researchers have focused upon moral judgment in teachers. One assessment of moral reasoning in teachers indicates that they have moral reasoning levels (P% = 43.28) comparable to the level of the general adult population (P% = 40.0) (Griffore & Lewis, 1978). In this study moral reasoning level was found to be unrelated to the age, sex, educational achievement, level taught or degree of educational experience of the teacher. Other studies have observed moral reasoning levels ranging from P% = 46.4 to P% = 56.8 (Bernier, 1976; Oja, 1978) among experienced teachers.

The Deliberate Psychological Education model of Mosher and Sprinthall (1971) has been employed successfully to induce moral judgment among inservice groups of teachers (Bernier, 1976; Sprinthall & Bernier, 1978; Oja, 1978; Oja & Sprinthall, 1978). One assumption guiding such research is that teachers' level of moral judgment will determine their classroom behavior, thus indirectly impacting the moral development of their students. There is not evidence, however, of a clear-cut relationship between teachers' moral judgment level and behavior. Some research suggests that children prefer moral reasoning models one stage above their own level, and in summarizing 10 years of research with the Deliberate Psychological Education Curriculum model, Sprinthall and Mosher (1978) suggest that "matching models" promote the moral development of students. It has not been investigated whether teacher's moral judgment level alone matched with student moral judgment level promotes development.

In a recent review of teacher development, McNergney and Carrier (1981) synthesize the views of James Rest on this issue as he suggests a direction for research.

> ...Rest points out that one class of activities that has not often been examined as an index of real life behaviors is that of verbal behaviors - that is, verbal opinions, arguments, or judgments expressed about moral issues in everyday life. His argument is that the expression of a moral judgment, whether it be in a courtroom, a classroom, or at a cocktail party, is a potentially powerful mobilizing force, which may have a strong impact on the shape and occurrence of external events. The ramification of publicly stated judgments are undoubtedly heightened when they are expressed by authority figures or role models - both of which often describe classroom teachers.
>
> (p. 145)

A related assumption is that movement toward greater teacher effectiveness accompanies movement toward higher levels of moral reasoning. To our knowledge, no research has directly addressed this rather crucial assumption. One preliminary investigation of eight female teachers did find differences in teaching views and practices for those with low (P%=25) versus those with high (P%=34) moral judgment levels (Lubomudrov, Johnston, Parsons, 1982). Those at higher levels placed less stress on obedience to rules and saw their role as one of encouraging cooperative interaction in the classroom rather than one of maintaining autocratic control. These higher level teachers valued greater give-and-take between themselves and students and placed more emphasis on meeting the individual needs of the students. While this study is suggestive, investigations carried out with larger samples are needed before we can conclude that such differences are reliable. As the authors themselves point out, further investigations are needed to determine how such differences relate to teacher effectiveness and the ability for the teacher to adapt classroom practices to students' developmental levels (Lubomudrov, et al., 1982, p. 16).

In summary, a variety of studies indicate that moral judgment development can be fostered in adults with the use of a variety of intervention strategies. More research is needed to assess the durability of such changes. Furthermore, if such programs are to be employed in staff development programs for teachers, research is needed on the relationships among moral development level, teaching behaviors and classroom practices.

Ego Development

The concept of ego development has played an important role in clinical and theoretical work but only recently has ego development become a topic for empirical study. A pioneer in this work is Jane Loevinger, whose concepts of ego development will be discussed here. Loevinger draws upon cognitive developmental theory and H. S. Sullivan's theory of the self-system for her conception of ego functioning as involving "the striving to master, to integrate, to make sense of experience" (Loevinger, 1966, 1969). For Loevinger, ego development involves sequential changes in an individual's overall frame of reference. In the course of development the individual comes to regard one's self and others in an increasingly differentiated and complex fashion.

Loevinger's conception of ego development must be distinguished from that employed by researchers more closely tied to traditional psychoanalytic theory (Hauser, 1978). For such thinkers the ego's primary function is to find solutions to the problem of instinctual expression. Ego development, therefore, involves the development of coping patterns, cognitive functions, defenses and interpersonal skills (Haan, et al., 1973). In contrast, Loevinger's conception of the ego is predominantly cognitive; the ego provides a framework of meaning which the individual imposes upon experience.

Loevinger describes development as a sequential progression through distinctive frameworks of meaning. Seven stages and three transitional phases have been identified; each ego stage has its own "inner logic" which helps to maintain the stability of its structural characteristics through selective inattention to factors inconsistent with the current ego level (Loevinger, 1969).

Each of the ego stages differs along the dimensions of impulse control, conscious preoccupations, interpersonal style and cognitive complexity; that is, each distinctive meaning framework has an associated character type.

The stages of ego development, as described in Table 3, are not tied to given ages. Individuals may, and do, stabilize at certain stages; among adults there are representatives of each stage who can be characterized in terms of the features specific to the stage at which they stabilized. Individuals at the early stages are impulsive and fearful, with dependent and exploitive interpersonal styles and stereotyped cognitive styles (Loevinger, 1976). The characteristics of the first three "Pre-Conformist" stages are described in Table 3; it should be noted that the lowest stage observed among adults is I-2.

Individuals at the Conformist stage (I-3) or the Self-Aware transition (I-3/4) place a high value on conformity to social norms on appearance and social acceptability. Belonging and being helpful characterize the interpersonal style of these individuals while stereotyped thinking and the use of cliches characterize their cognitive style. During the Self-Aware transition there is an increase in self awareness accompanied by the beginning development of situational logic and awareness of individual differences (see Table 3). The Self-Aware ego level has been found to be the predominant adult ego level (Loevinger, 1976; Hauser, 1976).

Further growth in self awareness and a capacity for self criticism are characteristics of the Conscientious (I-4) stage. Rules are internalized and self-chosen standards guide long-term plans. This stage marks the beginning of Post-Conformist development. Individuals who have reached these higher levels of development (I-4/5, I-5, I-6) value interdependence in interpersonal relations and display a high degree of cognitive complexity. They are able to cope with internal conflict by drawing upon their increased self awareness (see Table 3).

Loevinger's levels of ego development can be compared with levels of cognitive development and levels of moral development (Table 2). Loevinger claims that intellectual development may be necessary, but is not sufficient for ego development (Loevinger, 1976). She argues, contrary to Piaget, that ego level and social responsiveness are limited by one's intellectual level. On the other hand, she says, there are many cases of individuals whose intellectual development is far in advance of their ego development. Loevinger regards moral development as but one aspect of ego development. She asserts that moral development in the Kohlbergian

Table 3

Stages of Ego Development

Pre-Conformist	Pre-Social - this phase is symbolized by the newborn baby who has not yet formed an ego. The formation of the ego begins with the process of separating oneself from one's surroundings. The child who fails to differentiate the world of inanimate objects from oneself in the appropriate time interval is called autistic.
I-1	Symbiotic - during this phase the baby maintains a symbiotic relationship to its primary caregiver while continuing the separation of self from non-self. Language plays an important role in the baby's developing sense of self as a separate person.
I-2	Impulsive - in this stage the child employs bodily impulses to continue and maintain the formation of a separate identity. When impulses dominate behavior, control can only be effected through external constraint and immediate rewards and punishments. Aggressive behavior and temper tantrums exemplify the intense, impulsive reactions at this stage. Persons who remain at this stage are strongly dependent and demanding. Other people are valued for what they can 'give to' the individual at this stage. Thinking is in terms of of the present, with little meaning made of past or future.
I-Delta	Self-Protective - in this stage individuals begin to take self-control of their own impulsiveness and learn to anticipate rewards and punishments. Rules are recognized at this stage but used for one's own advantage; the individual's main rule is 'don't get caught.' Blame is placed on others or on circumstances when satisfaction is not achieved. Individuals who sta-

Table 3 continued
Stages of Ego Development

	bilize at this stage maintain manipulative and exploitive interpersonal relations and thus tend to be opportunistic, deceptive, and preoccupied with control and advantage.
Conformist I-3	Conformist - this stage is usually reached in childhood or adolescence as individuals place strong trust for their welfare in the family group, the peer group, or socially approved norms. Rules are obeyed simply because they are group-sanctioned rules. Belonging is of utmost importance at this stage; feelings of disapproval and shame become critical issues. Behavior is viewed in terms of external actions and concrete events rather than feelings and inner motives. Personal emotions are expressed through cliches, stereotypes and moralistic judgments. The individual who remains at this stage is preoccupied with appearance, social acceptance and reputation.
I-3/4	Self-Aware - at this transition level there is an increase in self awareness and the beginnings of an appreciation and understanding of multiple possibilities, alternatives and options in problem-solving situations. Growing awareness of inner emotions leads to greater self-reflection although at this stage feelings are expressed in vague or global terms. Self-consciousness and growing self-confidence at this stage begin the process of replacement of group standards by self-evaluated standards.
I-4	Conscientious - in this stage the individual becomes capable of self-criticism; this combined with long-term self-evaluated goals and ideals and a sense of responsibility form the major elements of the adult conscience. Rules are internalized; guilt is the

Table 3 continued
Stages of Ego Development

	consequence of breaking inner rules. Exceptions and contingencies in rules are recognized in direct relation to a growing awareness of the subtleties of individual differences. Behavior is seen in terms of feeling patterns and motives rather than simply actions. Individuals at this stage are preoccupied with obligations, privileges, rights, ideals, traits and achievement, all defined more by inner standards and less by the need for external recognition.
Post-Conformist I-4/5	*Individualistic* - at this transition level the sense of individuality is of utmost concern, coupled with a heightened awareness of emotional dependence on others. There is increased toleration of self and others and an awareness of inner conflict. There is a willingness to tolerate paradoxical and contradictory relationships between events rather than reducing them to polar opposites. Psychological development and psychological causality are normal ways of thought at this stage.
I-5	*Autonomous* - the distinguishing characteristic at this stage is the individual's capacity to tolerate and cope with the inner conflict that arises between conflicting perceptions, needs, ideals and duties. One is able to unite ideas that appear as incompatible options to persons at prior stages. The individual acknowledges other individuals' needs for autonomy while realizing the limitations to autonomy. Mutual interdependence is highly valued in interpersonal relations. Individuals at this stage are concerned with self-fulfillment, differing perceptions of one's role, complexity of alternatives and issues of justice in addition to concern about the individuality and achievement issues of prior stages.

Table 3 continued
Stages of Ego Development

I-6	Integrated - this stage is the hardest to describe because cases are rare. The characteristics of the autonomous stages are in evidence in this stage but in addition there is the consolidation of a sense of identity. At this stage one has the capacity to reconcile conflicting demands, to renounce the unattainable, and to truly cherish individuality.

(adapted from Loevinger, 1976)

sense, is a necessary, but not a sufficient, condition of ego development. Ego functioning involves the integration and coordination of cognitive, psychosexual, psychosocial and moral strands of personality. Ego level must be regarded as a "master trait" governing the expression of all these other aspects of personality.

In discussing methodological difficulties with measures of ego level, Loevinger makes it clear that there is no straightforward relationship between ego level and behaviors (Loevinger, 1970a, pp.8-10). Behavior has multiple causes and is only probabilistically related to ego level. Behaviors which might characterize specific ego levels of functioning could also be found at earlier levels in more tentative or embryonic forms. Furthermore, since every individual displays behavior at more than one level "every behavior sample must be assumed to be diverse with respect to ego level" (p. 9).

The non-linearity of relationships between ego level and behavior has been demonstrated in many studies. Conformity behavior displays a curvilinear relation to ego level with highest levels of conformity occurring at the middle ranges of ego development (Hoppe, 1972; Hoppe & Loevinger, 1977). Cox (1974) failed to find a linear relationship between ego level and helping behavior in experimental and natural settings. Other studies have compared patterns of behavior among individuals with low ego levels versus those with high ego levels. Candee (1974) found that lower stage activists regarded politics in terms of the physical or emotional effects on themselves, while higher stage activists perceived greater political complexity and asserted human development and mature justice as political values. Hauser (1978) found considerably more sexually flirtatious behaviors and considerably less warmth and availability among pre-conformist adolescents than among post-conformist adolescents. Among pre-conformist subjects, Frank and Quinlan (1976) found more incidents of street fighting and somewhat more homosexuality and runaway behaviors for individuals at the impulsive level versus those at the self protective level. These studies suggest that ego levels may be related to distinctive patterns of behavior.

Lorr and Manning (1978a) provide further support for this conjecture. Examining ego level and interpersonal style in a large sample of high school and college students, they identified two dimensions underlying variance in ego level: 1) degree of socialization in behavior and 2) degree of rule boundedness in social attitudes and belief. With regard to the first dimension they found that nurturance, conscientiousness, trust, tolerance, psychological-mindedness and interersonal sensitivity were positively related to ego level; close-mindedness and external control were negatively related. With regard to the second dimension, rule boundedness was found to have a curvilinear relation to ego level. Rule freeness decreases up to the conformist level then increases; the opposite holds true for rule boundedness. Lorr and Manning suggest that the systematic relationship between these underlying dimensions and ego level raise questions about the assumption of qualitative differences among discrete levels.

Many researchers have investigated relationships between ego development, sex role identity and attitudes toward women (Roznafszky & Hendel, 1977; Erickson, 1977b; Schiff & Koopman, 1978; Lorr & Manning, 1978b). Individuals with higher ego levels have been shown to display more pro-feminist attitudes (Roznafszky & Hendel, 1977; Erickson, 1977a). Androgynous women were found to have significantly higher ego levels than masculine women (Schiff & Koopman, 1978) and undifferentiated males were found to have significantly lower ego levels than other groups (Lorr & Manning, 1978b).

In a recent review of the relevant literature, Stuart Hauser concludes that the sentence completion task employed by Loevinger to assess ego level is not simply a measure of verbal fluency or intelligence (Hauser, 1976). He contends, however, that more adequate tests of some of the assumptions of the theory are necessary. The claim that the sequence of ego development has an invariant order and that the stages correspond to a range of distinctive character styles, is particularly problematic.

Several other points are made by Hauser with respect to the conceptual formulations underlying the model. First of all, he states, there is a need for a more explicit formulation of the principles governing the mechanism of change and the principles governing organization of structure within qualitative levels.*

*This lack of explicitness is not unique to Loevinger's theory, but is a problem for most of the cognitive-developmental theories.

Secondly, he points out that there is need for further investigations on the relationship between ego development and social processes. Empirical differences among social groups have been noted (Cox, 1974; Martin & Redmore, 1978; other studies cited in Redmore & Loevinger, 1979) and it is not clear whether such differences are artifactual - resulting from class biases in the scoring method -- or if they represent real differences among social groups.

Finally, he calls for clarification concerning the interrelations between affective, motivational and cognitive components in ego development. This latter issue becomes particularly important in light of a growing body of evidence on the relation between ego level and defense. In a study of "hippies" Haan, Stround and Holstein (1973) predicted that coping mechanisms would increase and that defensiveness would decrease with ego and moral development. The first prediction was supported for moral development but not for ego development.

The second prediction was not supported in either case. No significant differences in use of defense mechanisms was found for different levels of moral development. More surprisingly, they found an increase in defensiveness with increases in ego level. This result is unexpected as increases in ego level are said to involve greater openness to experience. But neither the authors nor Hauser (1976) view this result as posing problems for Loevinger's model. Instead they claim that the contradictory result is due to the special nature of the population ("hippies") and the character of the coping and defense measures employed.

McCrae and Costa (1980) directly address the issue of the relationship between openness to experience and ego level. Ego level was found to be significantly related to 7 of 10 measures of openness to experience (their Experience Inventory Total Openness Score; as well as subscale scores on this inventory for Aesthetics, Actions, Ideas and Values; the Liberal Thinking Scale of the 16 PF and a measure of Traditional Family Ideology). Near zero correlations were found between ego level and Openness to Fantasy, Feelings and the Imagination scale of the 16 PF. Such findings are quite perplexing given Loevinger's emphases on the role of self awareness in ego development. Furthermore, Meikle (1982) found that "psychological distancing" -- a construct based upon measures of defensiveness and formal thought -- is related linearly to ego level, with the highest level of distancing occurring at higher ego levels. Meikle cites Haan, et al. (1973) and McCrae and Costa (1980) in support of the conjecture that "while openness to new *interpersonal* experience -- aesthetics, actions, ideas, values, ideology -- may enhance ego development, 'developed egos' are at least as defended against fantasy and feelings as 'undeveloped' ones" (p.101). A reexamination of Loevinger's model leads him to suggest that distancing -- involving increases in emotional defense and cognitive complexity -- will increase, up to the Conscientious level. However, the transition from the Conscientious to the Autonomous level ought to involve a lessening of defense as the individual attempts to cope with inner conflict and works out communicating and expressing ideas and feelings. While Meikle failed to find evidence for such a downward turn in his own study the small number of subjects beyond the Conscientious stage placed constraints on the test. Further investigations of these issues with larger samples are needed.*

These studies indicate that dispositional variables interact with ego levels in ways not immediately obvious on current theoretical grounds. The impact of such variables should be of concern to those seeking to utilize the theory in applied settings.

Loevinger's theory of ego development has been employed in studies of teaching behavior (Bernier, 1976; Oja, 1978; Witherell, 1978). Studies have found that experienced teachers stabilized at the self-aware ego level (Sprinthall & Bernier, 1976) or at the conscientious ego stage (Oja & Sprinthall, 1978). As

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*Meikle also points out that characteristics of Loevinger's instrument may make it impossible to demonstrate this downward turn. The instrument demands "self-revelation, cognitive complexity, and (modified) impulse expression. But if the 'autonomous' individual is indeed autonomous, why would she conscientiously strive to demonstrate this? ...the truly mature and autonomous person, 'ruled' by neither impulses nor social demands, may or *may not* bring her full complexity and depth of understanding to the task of sentence completion and may or may not be scored 'autonomous.' At the same time, the overly conscientious person whose defenses and formal thinking are well developed, describes his life in obsessive detail and is scored 'autonomous' (Meikle, 1982, p. 106).

ego development doesn't occur naturally in adulthood -- the rate of change has been found to level off by the end of high school (Redmore & Loevinger, 1979) -- interventions are necessary to promote development to higher stages (Bernier, 1976; Pinedo, 1979).

Loevinger is not optimistic about the prospects of such programs (Loevinger, 1976, p. 429) but a number of investigators have, nevertheless, made the attempt. Mosher and Sullivan (1975) implemented a high school curriculum in moral education that led to significant growth in both moral and ego development. V. L. Erickson (1974, 1977a) employed a seminar-practicum format in a course designed to foster psychological development in women through a study of portrayals of women in literature. This intervention succeeded in promoting moral development and ego development among participants. Chiosso (1975) introduced a curriculum in interpersonal relations for high school students. As a result of this intervention, students with lower ego stages experienced upward movement, but no change or downward movement was observed for higher stage subjects. A similar finding was reported by Hedin (1979). She implemented an action learning program in health education which was designed to match the ego and moral levels of participating high school students. Only the group at lower levels of ego development (I-2, I-Δ, I-Δ/3) showed significant gains as a result of the intervention.

The Deliberate Psychological Education model was employed by Bernier (1976) and Oja (1978) with groups of practicing elementary and secondary teachers. While these interventions were successful in promoting development in other areas of functioning, no significant advances in ego development level were found.

In summary, programs employing a variety of techniques appear to be successful in promoting ego development among adolescents but not among adults. The issues raised in our discussion of moral development have relevance here. The relationship between ego level and classroom teaching practices is unclear. In a recent case study of five teachers, Witherell (1978) found no straightforward relation between ego level as assessed by the SCT and ego level as exhibited in classroom teaching and interview responses.*

*Scores on the DIT also did not reflect distinctions made in the behavioral and interview ratings.

Witherell suggests that personality integration and interpersonal functioning may be important determiners of consistency between an individual's reasoning and action. One teacher in the study displayed striking discrepancies between her score on the SCT (I-4/5) and ratings of teaching behavior (I- △ /3) and ratings of teaching behavior with interpretation (I-3/4). This teacher repeatedly raised issues related "to a critical lack of personality integration in the areas of affective development and authority relations" (Witherell, 1978, p. 378). If these factors do play an important role in how ego level is manifested, researchers employing Loevinger's model will need to pay much closer attention to affective and motivational variables such as anxiety, hostility, sociability and assertiveness, to name but a few. Selman's (1980) research on interpersonal stages of development will help address these.

Conceptual Development

O. J. Harvey, David Hunt and Harold Schroder (1961) have formulated a personality theory which describes persons as occupying positions on a developmental hierarchy of increasing conceptual complexity, self responsibility and autonomy. The theory asserts that individuals display developmental differences in the complexity of their conceptual system. These differences in cognitive complexity modulate the individual's ability to differentiate and integrate environmental stimuli as well as his/her ability to function adaptively in a given environment. Four distinct stages of cognitive complexity have been described by these theorists:

Stage 1 Unilateral Dependence - The individual has difficulty understanding dissimilar concepts. He or she has difficulty with ambiguity and tends to view things in terms of absolutes or concrete concepts. Behavior is a response to external conditions, with little understanding of internal feelings.

Stage 2 Negative Independence - The individual acts to oppose control by an external rules or conditions. Behavior is characterized by the questioning of external opposition, by instability, ambivalence and lack of consistency in judgments. Testing of limits and avoiding dependence on anybody or anything is common.

Stage 3 Conditional Dependence and Mutuality - The individual separates him or herself from the external environment and begins to establish a mutual relationship with it. The individual is able to combine and compare different conditions. There is an effort to question and test concepts, representing adoption of an "empirical attitude." There is potential for self-reflection and awareness of oneself as a causative agent.

Stage 4 Interdependence - The individual has many concepts available to him or her and is capable of ordering, combining and evaluating them in many different ways. The individual is capable of interdependent relations with the environment. There is an integration of mutuality and antonomy. The individual is highly effective in adapting to a complex and changing environment.

(Harvey, Hunt & Schroder, 1961)

Conceptual development takes place along an underlying "concreteness-abstractness" continuum (Pervin, 1970). Hunt (1975) built upon the original conceptual systems theory and defined "conceptual level" in terms of degree of abstractness (ability to separate, integrate and/or discriminate many conflicting conditions) as well as degree of interpersonal maturity (increasing self-responsibility).* Individuals at higher conceptual levels are more structurally complex, more capable of responsible actions and more capable of adapting to a changing environment than are individuals at lower conceptual levels (Hunt, 1975).

Conceptual systems theory was formulated within an interactionist perspective. Behavior is assumed to be a function of the interaction between structural aspects of the personality (cognitive complexity) and the environment. Researchers in this tradition, are, therefore, concerned with demonstrating the relation between cognitive complexity and behavior. As a result their research focuses on behavioral outcomes to a far greater degree than that of other cognitive-developmental theorists. Such a focus has not been without its problems. Conceptual systems theory posits structural development of conceptual systems (from concreteness to abstractness) occurring parallel to changes in interpersonal orientation (from dependence to interdependence). Criticisms have been leveled at this conflation of structural with content changes (Miller, 1981). The question is whether the development of conceptual complexity is invariably related to the prescribed changes in interpersonal attitude: couldn't there exist a conceptually concrete interdependent person or a conceptually complex authoritarian person?** The empirical orientation of these researchers ought to ameliorate the problem somewhat, as such "anomolous" types should be discoverable by research. However, the measures of conceptual complexity are (of necessity) indirect, and as they assess structural characteristics in terms of how the individual copes with conflict and ambiguity they may not enable the detection of such anomolies (Miller, 1981). Despite such theoretical problems a significant body of research supports the general model of conceptual development.

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*Conceptual levels follow the developmental order depicted above but with labels 0-3 rather than 1-4. Conceptual level is assessed by evaluation of responses to six sentence stems designed to tap manner of dealing with conflict and response and orientation towards authority and rules (Paragraph Completion Method).

**A related issue is the implicit value orientation of the theory. Higher conceptual levels are regarded as the most desirable state, and instructional interventions ("matching") are designed to promote development toward them. Alan Miller points out that such a value orientation is not universal, "I recollect submitting a paper to a science journal some years ago, which outlined the CST matching model, only to have the manuscript returned with the somewhat peevish comment by the editor that there were far too many of 'my' high-CL people around and that they were clearly the cause of many of society's ills" (Miller, 1981, pp. 7, 8-9).

According to the theory, concrete thinking is characterized by less self-delineation, greater tendency toward extremes, and less flexibility in problem-solving. Concrete thinking tends to be accompanied by absolutism and categorical thought and by a greater belief in external causality and the "oughtness" of rules (Harvey, Hunt & Schroder, 1961). Concrete thinkers tend to seek a simple and highly structured environment (Harvey, Prather, White, Alter & Hoffmeister, 1966).

The more abstract person is said to be able to consider alternatives and to be capable of integrating more information from the environment (Hunt, Joyce, Greenwood, Noy, Reid & Weil, 1974; Harvey, Hunt & Schroder, 1961). Abstract conceptual structure is associated with creativity, greater tolerance for stress, greater flexibility and a wider array of coping behaviors (Harvey, Hunt & Schroder, 1961; Hunt & Joyce, 1967). A less structured environment is usually required by the more abstract person and s/he usually prefers tasks of greater complexity (Hunt, Joyce, Greenwood, Noy, Reid & Weil, 1974).

Conceptual systems theory has been applied to the teaching-learning process as a framework for describing attribute-treatment interactions. Hunt (1966, 1970, 1971) has outlined a "matching" model describing learning environments that should promote development of conceptual level. The matching model builds upon the observation that individuals with low CL prefer highly structured environments while those with high CL prefer a lower degree of structure or are flexible with regard to structure (Hunt, 1970, 1971). "Matching" for developmental growth involves placing an individual in a learning environment slightly more complex and demanding than the individual would naturally prefer.

Evaluation of the effectiveness of the matching model is difficult because of lack of consistency in design in much of the research. Researchers employ various criteria for demarcating between low and high conceptual level and are unsystematic in their specifications of low versus highly structured environments (Miller, 1981). As development of cognitive complexity seems to require a long treatment duration, few adequate tests have been made of the developmental matching model. Despite such problems a recent review of the literature concluded that "much of what has been demonstrated is in support of theoretical predictions" (Miller, 1981, p. 80).

Obviously, an important component of any learning environment is the teacher. One instructional strategy that has been recommended is that of matching students and teachers with respect to cognitive level. Before implementing such a strategy one ought to inquire as to whether differences among teachers in CL are matched by similar differences in teaching behaviors. Murphy and Brown (1970) explored this question in a systematic fashion. After generating hypotheses about teaching behaviors which should characterize individuals at different levels, they assessed these predictions by observing teaching in individuals representing a variety of CLs.

According to Conceptual Systems Theory, teachers in Stage 1 (unilateral dependence) should tend to view the world in a dualistic, black-white fashion. They should believe strongly in rules and roles; regard the statements of "authority" as representing the highest good; and regard all questions as having a single right answer. In the classroom they should tend to discourage divergent thinking and to reward conformity and rote learning.

Teachers in Stage 2 (negative independence) should be charaterized by conflict between compliance and opposition to authorities and be low in self-esteem and high in alienation and cynicism. They should function in a manner similar to Stage 1 teachers but would probably be more erratic and unpredictable in their expectations of students.

Stage 3 teachers ought to have high affiliative needs and thus be dependent upon the standards of others. They should encourage more student self-expression and be less concerned with narrow achievement and conformity to rules.

Stage 4 teachers are the most abstract and conceptually complex. These teachers would regard knowledge as tentative rather than absolute and have the ability to consider situations from alternative points of view. Such teachers ought to encourage divergent and complex thinking among students and to reward the processes, rather than just the outcome, of thinking.

To test this model Murphy and Brown evaluated the handling of information and the application of sanctions by student teachers in a practice teaching session.* Teacher-trainees at higher stages showed a greater tendency to help students theorize, to help them toward self-expression and to reward search behavior (process). Individuals at higher stages tended to do less narrow questioning and less rewarding of attainment (outcome). Stage 3 teachers rewarded group social interactions to a greater degree than did Stage 1 teachers. While Stage 1 teachers rewarded conformity to a greater degree than did Stage 3 and Stage 4 teachers, the difference between the groups was not statistically significant.

Their findings support several predictions made from the model. Further investigations of this type are needed. They should employ experienced teachers rather than teacher-trainees, and sample a wider variety of behaviors.

Other investigations have shown that differences in CL are related to specific patterns of teaching. Harvey (1970) reports that differences in CL are related to level of control exerted in the classroom. Two distinct teaching styles were first identified: 1) "fostering exploration" (utilization of a variety of teaching methods, encouragement of student diversity, creativity and participation in activities) and 2) "dictatorialness" (need for structure, coldness, rule orientation, lack of flexibility). System 1 teachers scored highest on the "dictatorialness" dimension and lowest on the "fostering exploration" dimension; the reverse was true for System 4 teachers.

Other studies have examined the relation between CL and more specific teaching behaviors. A positive relationship has been found between CL and empathic teaching style (Hunt & Joyce, 1967; Hunt, 1976). Teachers with higher CL are able to construe events from the perspective of the student and to utilize that information in organizing teaching approaches. Teachers high in CL tend to encourage more self-expression and problem-solving behaviors on the part of their students (Murphy & Brown, 1970; Rathbone, 1970 - cited in

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*The conceptual complexity of these teacher-trainees was assessed with Harvey's Conceptual Systems test. Over half (55.9%) of the subjects were scored as Stage 1; 15.5% Stage 3; 8.85% Stage 4; and the remainder admixtures.

Miller, 1981; Joyce, Lamb & Sibol, 1966). Student teachers high in CL engage in more indirect teaching (Thies-Sprinthall, 1980). Teachers with high CL are more successful in creating and managing a variety of teaching environments (Joyce, Weil & Wald, 1973). Such teachers are better able to adapt the environment to meet the needs of students (Rathbone, 1970 - cited in Miller, 1981; Hunt, 1976; Peterson & Clark, 1978).

Hunt (1971) suggested that the mismatch of low CL teachers with high CL students could result in negative learning. Hill (1969 - cited in Miller, 1981) confirms this, noting greater gains in performance on interpretive items for those matched than for those mismatched. Phillips (1972 - cited in Miller, 1981) noted that students had more positive perceptions of the classroom environment when their CL matched that of the teacher. On the other hand Allen (1977) found that the self-esteem of high CL students was higher when they were paired with low CL teachers than with high CL teachers. The self-esteem of low CL students was found to be low regardless of the teacher's CL. Thies-Sprinthall (1980) found that low CL teaching supervisors gave high CL teacher-trainees very low ratings despite the fact that their teaching was quite effective as assessed by the Flanders Interaction Inventory. In this case, the mismatch led to negative evaluations, but not necessarily learning.

Unlike what we found in the case of moral and ego development, there appears to be substantial support for the view that CL is systematically related to teaching styles. However, we should be careful not to assume that CL is the sole determinant of such behavior. It is clear that factors other than conceptual complexity play a role in determining an individual's openness, flexibility and valuing of interdependence. Those hoping to implement matching strategies to foster cognitive development might pay more attention to the variables of student motivation and ability (Miller, 1981). Those interested in the relation between CL and teaching behavior ought to pay attention to emotional factors influencing personality integration (Witherell, 1978). Finally, more investigations are needed on the effects of student and teacher matching.

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APPENDIX B

RESEARCH INSTRUMENTATION

Team Meeting Tape Transcript

UR So from now on what you'll be doing is tearing off the last two sheets and including them as you go.

Jack That's going to be about every three weeks?

UR Right. That's why I'll take what you have today if you're ready or you can mail it in after the

Ted Should we enclose this one in there, too?

UR Oh, yeah.

Ted Well, I don't have a copy of this one.

UR Okay, I'll copy whatever - want to put a note to me on the top?

Ted Okay.

Jack These logs we're doing, we don't discuss them. Is that correct?

UR In the log? You mean as a group? Not necessarily. People at any time, I hope, are documenting things in their logs which they are bringing to the group for discussion, but we are not necessarily feeling like everything that's in the log has to be covered in the meeting.

Jack Right, right.

Ted UR, we rip off the top and send that to you?

UR No, you keep the top, the original, and send the two copies.

Ted Okay.

Jack I said in here, I don't cover log and my log that I had was destroyed by me intentionally in my recent

UR What I was planning to do with these first logs is read through them and I won't comment on the logs, I mean I won't write on them but I hope to be able to interview . . . in fact, interview you all in maybe three more weeks. And that could be a time when I could respond to any kind of questions that you have already initiated in your journal. Or answer any or deal with any issues that you felt were important or that maybe I might see in the journal that would help you to clarify what the role of the log is.

Ted What else was I going to get downstairs? I was going to get the peanut butter. What else does anybody want?

Brooks Nope.

Jack I'd like a beer.

Elliot Regarding the copies of the journals. Would I have use for a copy for myself?

UR To keep the journal you mean?

Elliot For myself, yeah.

UR I guess over time there may be times in the meetings when questions might be asked of different individuals in the group and it could be that somewhere you might remember you had documented something - an event in the school or something like that and my guess is that maybe it will be helpful for everybody to keep their original copy. That way you've got it and if you need to go back to it for any reason, you would have it.

RA We're also expecting that one of the things that we would be interested in seeing is how the process of action research works for a team and it may be that in reading, if you ever decie to read over your notes, you may be able to pull together even more information that would be helpful in discussing how action research takes place.

Elliot I guess if I ever wrote something in my journal that I wouldn't want someone to see then I have no secure place in the building to put it. It wouldn't be real cool if somebody went into my room some day and started reading what I've written.

UR Uh, huh.

Jack That was the question. In any of the things I wrote down I didn't refer to people by name in any way. You know, in keeping comments, not just the issues I tore mine up on but any other issues. If somebody made comment to me its immaterial whether it was Joe or Johnny or Sally as much as the comment was made that's the issue. The types of things that are being made, I would think most of them the same so to me. I'm not exactly sure what Elliot is referring to, but I wouldn't care who read my journal - there wouldn't be any names in it anyway.

Elliot Well, Jack, I don't mention names either.

Jack Just say a guy in 307 started

Brooks I feel like thisis almost a Madame DeFarge. You're knitted into the fabric so that nobody can tell what the code is.

UR I think that perhaps this question is one that we will want to come back to. particularly when everybody's here. which is the question of would you call it privacy or confidentiality with the kinds of issues that we might discuss as a group both in terms of perhaps what people are talking about in I group in terms of how that is interpreted outside, as well as the other way around which is mostly what you are talking about here. I would like to come back to that at a time when everybody's here.

Brooks So you have access to the logs. RA has access to the logs. Are you the only two outside this group?

UR Right and so the copies of the log are kept on file in the Project office. I better make a note so we can come back to that question again when everyone is here.

RA What was that?

Jack I told him he doesn't know how hard to bite that pencil. If he walks off with my pencil again during the meeting I'm going to chase him like a little kid.

RA When I worked as a teacher I used to charge kids a dime to borrow a pencil. They could have the dime back if they gave the pencil back.

Brooks I work on the system. I'll take anything that's of value - it works, but I've got a collection of combs and all kinds of stuff that I really don't need any more.

Laughter.

Brooks And sometimes if I don't mentally say the kid's name when I give him a pencil or her a pencil I forget. Usually, well, today, three days later. the kid came back for the article. Of course, a pencil is only three inches long; it started out as a full length pencil but better a pencil.

Jack comb

Brooks Half the teeth, I've ripped them off.

UR I have in front of me the tapes which have now arrived and can be used for people who prefer to mix and match their logs in terms of sometimes using the tapes and sometimes using the log paper. Also. I would like to leave these here with the person who is sort of going to be in charge of the tape and getting things down.

Brooks I have a place to store them. They can be locked and

UR Okay and then you would be in charge of taping each session?

Brooks Okay.

UR The tapes run for 45 minutes and so if you can keep aware of that.

Brooks Okay.

UR The first thing we said we were going to do at the last meeting was to sort out school context and issues that have happened over the week that you have probably logged in your journals but that as a group it was decided that - to report those out at the beginning of each meeting would be helpful so that we would have a composite picture. greater perhaps than the one each individual had so I wonder if we could take a few moments and find out what's been happening during the week. Anyone want to begin?

Ted One of the biggest ones - the hiring of the new principal. Progress reports.

UR What has happened on that?

Ted I'll discuss each one.

UR Well, just for my advantage . . .

Ted Down to the wire, there's two people being considered; one in the system and one outside the system. Let's go back, the tape set, I know its part of your question. The tapes and the things that we talk about in this class only stay in this . . . I'm scared.

UR Well, right, while you were sort of gathering the cookies, um, this was brought up by a couple of people and I think it goes both ways. We said that part of the question was what about logs and the kinds of things that are written in the logs about events in the school that may be are, that might be considered more private and confidential, and the other issue is one you just brought up, what about our conversations here that may be considered more private and confidential in that it may be important for our group, as a working group, to deal with some issues and yet perhaps we need to talk about how much of what is said here as a group should be kept within the group. Maybe we could just talk a little bit now.

Jack I have something to say to that issue which before Ted is going to start a few issues, and before he did, and I can certainly get outvoted, but I'd just like to read you the law that deals completely with this issue that I turned in. It says my log for this week has been destroyed; it contained many comments about the issue of the selection of the new principal that I heard teachers make; I made some myself. This seems to be the most important issue at present. Much of my concern is centered around the morale problem that exists in the school. To have turned this log in could have only fueled the fires more. I saw no useful purpose therefore, I destroyed the log. It would not be beneficial this time to discuss the items that I have no control over. Enough said, let's talk about positive steps to improve morale that we can all be a part of. I'm just saying yes, it was the biggest issue but we're not a factor, why hammer it, it's over, leave it alone. That's my views.

UR What are some other views?

Ted If we're supposed to be changing, we're supposed to be the ones to start some change, if you just leave it alone, nothing's going to change.

UR So you're saying that you would prefer that that be, because its so important, right now and has been this week, it ought to be an issue that we ought to feel free to talk about at least within the group.

Ted Yeah, if this leads to changes so people won't feel this way about, it would be a good feeling, like we found the best guy. Now, after we've found the best guy we can move on to more positive things. It seems to me whoever gets this job is - factors are not even within his control sometimes, are going to cast doubts about him, over his head already before he even starts, being unfair or the way it was done, I guess.

Elliot This group has nothing to do with the selection of the principal. Anything we would say about the selection process or the people involved would be mere gossip.

UR Any other ideas?

Brooks Well, I can't

Jack I'm saying it should be logged there as the biggest issue of the week but there's no sense of us discussing the issue that we have no control over the destiny of nor should we have. So, I say yeah, list it as the big issue of the week and let it be the dead issue.

Ted Just because it involves personalities?

Jack That's not our responsibility, to try to make this change, its too late, I am saying, it has happened, there's nothing we can do about that issue.

Brooks See, there's an illusion of decision making that

Ted But I feel that we should at least be to at least the point of having some say, at least have some, I don't know. Then what we're doing is having no control over very important factors at all like

Brooks That's right. There are very few school districts that even allow teachers to have input into career administrators.

Ted I don't believe that. I think most people are enlightened enough to at least let teachers have some input.

Brooks This is the 20th century and the way they do it. I talked to Len the other day we were in the checkout line, and I said, "How's it going?" And he said, "You really want to know?" I said, "Yeah."

Ted That's Manchester.

Brooks Yeah, Manchester is the biggest system in the state. He is solely responsible for interviewing people for administrative positions, for teacher positions. He picks one or two candidates; he sends them over to the school and that's the person. The teachers in the building have no input. He is the sole person in charge of hiring. And Manchester is a big system. And I said, "Wow, we are really lucky because we have some input when somebody's hired in this building, either somebody in the department has some choice of   or the people who are going to work with that person are let into that interview . . . we are really privileged so that's the whole thing.

Elliot I got off the   In recent years I've been through more   interviews   and every single interview I went to is a more int

Jack As far as the issue of a new principal and the connection with the morale in the school, then I think that's an issue that we very earnestly could discuss. How will a new principal coming aboard, how can we affect change that will make his job and the teachers' job easier to improve morale? I think we've got to look to the future, not the past. The past is over. I think that's a tremendous issue, there's going to be a new principal, that's an issue. Now, what can we do in action research to see that this new principal has our support to improve the morale in this school? I think that's the key thing right there, that should be discussed by this group, if we want to discuss the impact of the new principal, not last week or the week before or the process of how he got here.

RA But it seems to me that it would maybe be valid in your logs to just talk about how it affects you as a teacher and as a person, having this new person come in. Because, I mean, you as a person involved in the process that we're in now, you're going to be effected by that, as a teacher and as a member of the team. And so talking about those effects on you as an individual might be valid in the log, too.

Elliot I have no access to Jack's log.

RA Right.

Eliot And you're not going to come to me and say, well, Jack said this and . . .

RA Right.

Elliot Still you feel uneasy about writing some things.

RA Yeah?

UR And so the issue of confidentiality not only in the meetings is an important one but in individual logs continues to be I can assure you from the point of view of the project, that the logs are private and that you choose to share in the group whatever you as an individual want to share. And I would agree with RA that there may be things that are happening in the school that you would choose to write about in the log which may or may not be considered by you to be sort of more private or confidential but which you end up not bringing in to the meeting because it doesn't seem to connect exactly with what we're talking about. But I would certainly expect that there would be documentation in the logs of what is happening in the school and that's why I wonder, from the question that's underway, it sounds like the hiring of the new principal has raised a lot of issues. And the issues, somehow, are affecting individual members on the faculty differently. Now maybe it will change in a week or two weeks whenever the principal is hired here and teachers go on to make the best of the situation as it is. But I wonder, if you think about past principals, not this situation but think back to maybe a prior one. Are there some similarities or differences in the hiring process of that last principal that you see happening in this principal? In the reactions of the teachers then as far as reactions of teachers now in the process. I think that, being able to look back in that way is helpful for looking at change in the school. Just like last week when I was listening to the tapes when you discussed changes in the school, I heard a lot of people talking back about what had happened in prior years, in different terms of a principal, different conditions in the school, etc.

Elliot I think, if I am not mistaken, the last time the principal was chosen, there were no candidates from here. This time there were two.

Jack Yes, there was.

Brooks What I hear Jack saying is that he is one jump ahead of most faculty that have heard. He is saying, okay, where do we go from here? Regardless of who the principal is, how is that going to effect me? Where's the change worth giving my support where a lot of the comments are being made, have been made are more in the past, why these assignments? Why the decisions? How can those people possibly think they can effect my life this way? You know, that would be a very serious . . . getting a new principal for this school is the most thing we've been through together in a long, long time. This is my sixth year teaching and this is the most serious thing we have all confronted. That's even considering Teacher Corps, it created change but

Jack This is my fourth time confronting it.

Brooks How do you feel?

Ted Is this the way it was done all the other times?

Jack The principal hasn't changed the way I teach in my classroom for 16 years and hasn't affected me personally per se as a classroom teacher but has affected the overall philosophy of the school which I think is where the morale problem exists that exists now, not with the teachers that's unhappy about the way that they teach in their room as much as they are with their relationship with the rest of the school people and whether they're listened to or that type of thing. But as far as affecting me personally in the classroom that type of thing, it won't affect me a bit.

Team Meeting Documentation

New Hampshire Team Meeting
September 29, 1982

ON RA, John and Brooks started by writing agenda while we waited for the others to come. Brooks raised the issue of when meetings should start, John said he wanted to talk about the NSCD presentation. Other agenda items raised were the questionnaire, replacing Jack, reading through the proposal, school visits, and responses to Jack's letter of last year. I asked if we should really start. Brooks said she thought that meeting should begin right at 2:30. I said I thought that was fine, and that as far as I knew, Elliot was the only one who might have a problem with that. Ted asked if we were set on having it on Wednesdays. I said that UR and I were looked into that time, and Brooks reminded him that we had talked about it last spring. I asked if it was going to be a problem for him. He said his wife was working now and his kids got out of school early on Wednesday. He said it was okay now, but if one of the kids got sick or something it would be a problem.

TN This may be the first time we've really started a meeting - with an agenda - before UR got there. Brooks throughout this meeting seemed to be quite comfortable taking charge - I expected to see more of this behavior with Jack gone.

TN Another example of Ted having missed out on a clear decision made earlier. Not only that, it wasn't really a problem for him now - it just might be if one of his kids got sick or something.

ON UR came in. John passed out the staff development forms to Brooks and Ted. They filled them out and I explained to UR what each of the agenda items is. Brooks brought outher pictures of the summer to show UR and I. John goes out to get something in his room [illegible] returns with a ditto of the behavioral expectations for kids in the two behavior mod classes. Ted goes out and comes back with no explanation. John gives UR the "Voodoo Science" article for her to read - he had shown it to me before we atarted meeting. Ted comes back in with his staff development sheets from last year to use as a guideline in filling out this year's. UR passed out copies of the articles of John and Brooks she had said she would copy for this week.

TN Brooks shifts from task orientation to personal here - like when she uses very personal anecdotes to explain a point.

TN Last year Jack was in charge of getting the staff development forms for everybody - this year John took it upon himself. Interesting to see how Jack's duties get parceled out/assumed.

ON Brooks asks. "Where to next?" and asks John if we should address the NSCD. He says to leave him to the end. Brooks said she went through the proposal and took notes on the work we had left to do; DEcember the Human Services Survey. interview sample of teachers in the school, give MBI to other teachers in other schools, field observations, and literature review. I said that paralleled the items the project officer had raised in the letter we had brought to share. UR passed it out and teachers read it.

TN Again Brooks taking the directive role. She had clearly put some work into this week - her commitment seems greater every week.

ON Brooks talked about the lack of a junior high school schedling, of knowing what the school's goals and objectives are. since Teacher Corps. John said the school board dictated what noney got spent for regardless of philosophy. UR said that the principal might use a philosophy in stating priorities. She said that the history of change the project officer talked about in her letter was a summary of the philosophy of the school in a way, and that the interview Brooks and John did with the new principal was an attempt to begin to clarify a philosophy. I asked Brooks why she had raised the issue of a philosophy right now. She said she thought they often spun their wheels because they didn't know where they were going. If theyhad goals and objectives prioritized, things might go more smoothly. Ted said that the school board controlled that. John said the principal writes the goal. He said he'd like to find the state guidelines for junior high and see how that fit into the stated philosophy. UR said she would try to find them. She also said that they had examples of philosophies from other schools. I asked if we could get a copy of the new principal's goals and objectives. Ted asked if he wrote them every year and described how he had to do it when he was a principal. John asked Ted if he had ever shared what he had written with his teachers. Ted said no. John said he thought the principal had to write what he perceives was secret. Ted said it couldn't be secret - you could call the school board and they would give you the philosophy. John said he couldn't get his son's school records. Ted said that was illegal.

TN Interesting that Brooks raised the issue of the philosophy - since it was a component in the Michigan project and not this one. Is it inevitable that teachers come around to this in discussing what is going on in a school, or was it suggested to her by the Michigan project or the project officer's letter.

TN Individual differences - John and Ted perceptions about what is available to teachers from the administration. Ted said it wasn't secret that anyone could find out. John worked from a more practical, less idealistic basis, saying he had never seen it, in fact, couldn't even get his son's records.

TN All those times someone said they wanted to see the state laws and no one did anything about it - this time UR said she would look into it. She didn't all those other times - waiting for someone else to take initiative. Is that no longer necessary in the group, since members are participating more?

ON UR said that the issue of whether or not teachers are aware of the principal's statement of goals ties into the issue the team raised last spring about whether or not teacher and administrators define terms and perceive the school in the same way. Ted said it was silly to keep goals secret. He and John talk more about whether or not principals share those with the staff.

ON Elliot comes in. People keep talking, then there's a pause, and UR says, "Welcome, Elliot." and passes him the papers everyone else has gotten. Brooks said she was goal-oriented, and described how she made her students write goals for the year. She said in the reading she had done this summer it said that if teacher lacked goals they found their jobs frustrating, and when they lacked communication with other people they were frustrated. She said that may be our recommendation at the end of this - that a philosophy is needed. I said her ideas seemed to raise good questions for interviews about communication and clarity of goals. We looked at the survey that had been done and pointed out where we had begun to ask those questions, which could be probed in an interview. I said I thought Brooks had made an interesting connection to the Michigan project; that they had started with a philosophy and moved on from there. and that we started with the research and may be moving toward a philosophy. I said the same questions might be useful for site visits.

TN Clarity form Brooks hear about the goals of the research - to make some kind of recommendation, which might include the idea that goals and philosophy be clearer for teachers. This seems to reflect a concern of the team, or at least of some of the members, from the start of the project. It seems like the school has moved closer to this this year, but Brooks feels that more might be helpful.

TN I found myself taking a suggesting/probing role today - making open suggestions about how I thought information could best be used, or what questins might be asked, or asking people, especially Brooks and John why they had raised an idea rather than accepting it or waiting to see where it was going. Part of it was being tired and feeling like I was missing things, but I think there might be the feeling - for me and for others - that we have less time this year. and things have to continue to move along.

ON Brooks said, coming back to what we need to do, she felt that Survey for December was still on. John said we could probe the questions in the interview and then re-survey. Elliot said they could score the survey first, and then pick six people to interview from the stratified results. UR asked when would be a good time to give the interview, December, now? John said or after the second survey? Brooks said we need to score the surveys first. Brooks asked if there was a program available for analyzing this data. UR said she could arrange to meet with another university faculty member. Elliot said they just needed to find out the formula. UR or Brooks said they would contact the university faculty member re: a computer program and the software for it. UR said he may also have data on middle school teachers in his sample we could use for comparison. I said that when that scoring got done influenced when the interviews could be done. Brooks said she'd like to get the scoring done as soon as possible. Elliot asked how the score appeared, and UR explained the three sub-categories. Ted asked if six teachers was a big enough sample to interview. I said that once you saw the range from the scoring you could decide if six was representative. Elliot said there was no relation between the interviews and the surveys, though. I said that actually the interview could be used to validate the survey if similar questions were asked.

TN Research issues here of scoring surveys, sampling teachers, research validity. Teachers seem to be much more comfortable with these issues now than they did last year.

ON John referred to item four in the project officer's letter -literature review, and said we do that on-going. I asked if we wanted to an ERIC search on teacher morale or related issues. Elliot said we could just ask the other university faculty member for literature. UR said he said he hadn't reviewed the literature on teacher morale, so we had to decide if we wanted to follow his research or check out the literature on teacher morale. We talked about indicators for the ERIC search - teacher morale, middle school/junior high, student achievement, scheduling, teacher stress, burnout. UR said that another reason for doing that is that it addresses a concern the project officer had raised about the connection between teacher morale and scheduling or achievement, and this lets us check if there has been anything written on it.

TN Again, we seem to be answering another of the project officer's concerns - they seemto flow naturally out of the discussions we have.

ON John referred to number five in the project officer's letter, field observations, and said he didn't think we needed to do that, and that it was difficult to find schools similar enough to this junior high to do. The communities we knew of who had schools to visit were too different in style, size, and wealth. Brooks said she thought of all of them, one sounded best. She said we need to look through all the material Jack received and figure out if any of the schools were good. UR asked how we could get information on schools we don't know about. Brooks said you could call the Chamber of Commerce for those towns. Elliot and Ted were writing notes to each other at this point, not involved in the conversation I suggested they could also just contact the school principal. I asked John if he didn't think we should do it because it was hard to find schools or because it wasn't a part of the research we were doing. John said he wasn't sure if we needed to do it any more. Elliot said that what we're doing now has little to do with scheduling, that it was about teacher morale, and that field observations were not appropriate any more. Brooks said that if another school did things differently though that we could use it as a sample for recommendations we would make. She gave an example of something done at the Michigan site - teachers asked to fill out a sheet stating their scheduling preferences for the next year. John said we started with scheduling questions which got answered, and that now we were going beyond to see if the schedule changes were any good. Elliot added, as measured on the basis of staff morale. And John added, and then make recommendations but not a whole new schedule. Ted said he, like Jack, wanted to know what the question was. Elliot said that the project had changed over time, that they were paring it down so that future users could duplicate it. John said he felt that right now any school could do what they've done - survey the teachers and share with the principal, but that now they were going further. Elliot said to look at changes in staff morale. I asked if they felt the first survey had created changes and that now they were measuring the effects of those changes. Elliot said he wouldn't say that first survey had created the changes. John said, yes, that's what he thought we were doing now.

TN This was an interesting discussion of teachers' perception of what their research was and is, and how it has changed over time. I think we still need a clearer statement of exactly what changes have taken place if this is the direction they see the project taking.

TN I also have questions about their desire now to pare down the project - something both John and Elliot seem to be tending toward. I think it relates in part to the sense of pressure I mentioned above - of only having the year left to work in, and also to the larger issue of teacher time and amount of teacher energy - mental and physical it is possible to invest in an "extra" project.

ON Ted pointed out that one big change this year was big teacher raises. John said the paychecks were also on time this year, and they weren't last year, which made a big difference to people. Ted said he felt that the raises indicated that somebody finally appreciated what teachers were doing. John said that that wasn't how it happened - that the board had to go along with it given the facts they were presented. Ted said they didn't have to, and that it gave him a feeling of worth to have been recognized with a raise. UR said so that might affect your scores on this survey, and that that change in school context has to be discussed. Ted asked if it was one of those things that could just be said in the report. UR suggested maybe it could be an interview question.

TN Again, Ted sees the paycheck as recognition from superiors and John sees it in practical terms. Individual dimension - does Ted's sense of worth come only from outside/external recognition?

TN Also. Ted's perception of research - we'd talked several times of making biases and conditions clear and open in the research as a way of compensating for different variables. His interpretation of this is seen here - if we just say that teachers have gotten pay raises is that enough to cover us. It always seems to be a question for Ted of getting the research accepted by someone else - again an external criteria.

Teacher Logs

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ACTION RESEARCH ON CHANGE IN SCHOOLS

Instructions for Using Log*

The purpose of the log is to find out what is going on regarding the team's activities. This purpose will be served if you tell us what events occur and what your personal reaction is to those events. It will also tell us when certain events occur as you work together.

By events, we mean anything that relates, even minimally, to the team and its work. For instance, events might include the following:

-The principal asked why I wasn't in my classroom for an hour this morning. I replied that I was observing in _________'s room.

-_________ dropped by to tell me that the observation went very well in her class. I said that I hoped it would in mine, too.

-I read an article in TEACHER magazine that I think _________ would be interested--think I'll send it on.

-Ms. _________, at X School, called today and asked if she could borrow the materials we're using in the project. I told her I'd send her the manual for use but couldn't send the rest until the team had finished with it.

-I'm exhausted. The meeting went over two hours today and I'm mad as I can be at _________ for talking so much about that problem with the tape recorder.

As you can see from the above, event is a broad term here. We want you to tell us what happens as it relates to the project.

Further, when you wish to or when it appears necessary to you, we'd like to get your reactions to what happens. For instance, these reactions might fit the events noted above.

-I already told him I'd be out--he, in fact, arranged for the coverage. Can't seem to keep the communication straight with him.

-I'm glad that _______ had a good experience--makes me less anxious about next week in my room.

---

*Adapted from Tikunoff, W. J., Ward, B. A., & Griffin, G. A. Interactive Research and Development on Teaching Study: Final Report. San Francisco: Far West Laboratory for Educational Research and Development, 1979, 625 pp.

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-Maybe by sending this article I can get him to take my concerns seriously.

-Glad Ms. ______ wanted the materials. Wish we could get some additional sets in case the needs come up again.

-Probably shouldn't be so mad but it seems that ______ does take up too much time with procedural stuff.

So, what we have is a set of "events" and a set of "personal reactions" to them. It should be reiterated that the reactions are up to you—include them when you wish or when it appears necessary to make an explanation.

Each event should be dated. A space is provided in the left-hand column for providing the date.

Record each event as soon as you can after it occurs.

It isn't necessary to record events that are part of taped team meetings. We would, however, like your personal reactions to the meetings either in their entirety or to bits and pieces of them.

MAIL THE TWO CARBONS OF YOUR LOG IN THE ENVELOPES PROVIDED AT THREE-WEEK (OR THEREABOUTS) INTERVALS.

BE SURE TO WRITE LEGIBLY AND FIRMLY. IT ISN'T NECESSARY TO MAKE THESE LITERARY MASTERPIECES. THEY ARE RECORDS ONLY AND WILL BE TREATED AS SUCH.

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ARCS Team Activities

Meeting #1: October 14 Orientation

"What is Action Research?"

Review the handouts on Action Research, Steps in Conducting Action Research, ARCS Timeline

Team members complete remaining questionnaires on Action Research: 1) Professional Development, 2) Research-Skill Knowledge and Self-Perception, 3) Beliefs about Teaching/Learning, and 4) Initial Problem Identification

Meeting #2

"What is the nature of change in my school?"

- How does the process of change in my school operate? vs. other schools?
- What is the relationship of the principal and school change?
- What are the effects of change in this school?

Teachers react to these questions in their logs prior to the meeting.

Meeting #3

PIs present alternative conceptual frameworks for looking at change in schools. 3-4 representative articles brought in.

Meeting #4

"What is the nature of individual change?"

- Students? Teachers?
- How is individual change seen in classrooms?
- What helps or hinders change for teachers and students?
- What is the relation of the principal's position to teacher or student change?
- Examples of positive or negative change from your experience?

Team members react to these questions in logs prior to the meeting.

Meeting #5

PIs present alternative frameworks for investigating individual teacher and student change. 3-4 representative articles brought in.

Meeting #6

"What is the most researchable and manageable aspect of change for me to focus on in my school for an individual action research project?"

ARCS members interviewed prior to this session on this question.

Meeting #7

Continued discussion of "most researchable aspect of change for individual ARCS project."

PIs present information on alternate research processes stressing the need for identification of specific problems and the issue of "most manageable." These individual ARCS projects are a way for team members to practice and learn newer skills of a researcher before tackling the team project.

Meetings #8, 9, 10

"What issues of change do individuals choose to investigate further?"
"What research methods do individuals choose?"

Preparation of individual research designs.

Technical assistance provided by Research Assistant to individuals prior to meetings. PIs and RA present information and literature references appropriate to individuals' choices as they are asked for assistance at team meetings and in individual conferencing.

Authorities in research areas may be guests on research methodology if teachers desire it; i.e., Don Graves, Case Study Methodology (UNH).

Action Research on Change in Schools
Log Entry - Brooks
November 4, 1981

Interesting meeting - I liked Elliot's proposal - of possible topic to research - Evaluation by Portfolio. Teacher/administration evaluation is a popular concern K-12. Often talked about during negotiation years and topic during the year at APT meetings.

These are some of the notes I jotted down during today's meeting:

1. Look for Sunday's Boston Herald article on Portsmouth.
2. Also the most recent New Hampshire Times has an article about Portsmouth. Seems like it's getting to be "THE" city to move to for "up-and-coming" people.
3. End of term pressures are building - more about it in next week's journal.
4. I used to have an article about kid's learning and sugar - can't find it since I moved my room - kids need to be more aware of how sugar affects their behavior! (UR or RA - Do you have any information you could pass on to me? Sugar and kids' learning.)
5. I'm concerned about two girls in one class who are into sex and drugs - I'm glad I'm not a kid of the 80s.
6. I have a feeling that "something" is going to happen by Christmas time. Kids are hostile showing signs of violence - physical and verbal that are characteristic of the second week in June!

For some reason I noted the seating arrangement today - I plan to consciously reposition myself each meeting - will it affect our interaction?

November 6, 1981

Parents Night - Open House

I was astounded at the crowd of parents who attended our Open House. I wonder if the format had anything to do with the large turnout. We invited parents to meet each team of teachers. This was so that we could introduce ourselves and our general curriculum and school organization. We then adjourned to our individual rooms. It was Standing Room Only for Thaxter 7 team. The only complaint I heard today was that since so many parents showed up that some teachers never had a chance to see everyone. Also waiting parents were privy to other teacher/parent conversations/little privacy which led some teachers to gloss over specific problems with certain students.

What a marathon yesterday! At school by 7 am. 2:35 after school make-up. 3:30 AFT meeting until 5:30, back at school at 6:50 pm.

A fellow teacher asked me to accompany her for a drink and talk about our experience on the Selection Committee (junior high principal). I'm concerned about our #1 choice. It seems that he must be certified by Alternative #3. We are both concerned that the committee didn't really visit and check out our #2 choice. I hope we don't get stuck with someone we don't really "know."

Action Research on Change in Schools
Log Entry - Anne
April 20, 1982

It has been a while since I have written any log entries. Many important things have occurred concerning the project. I feel especially enthusiastic about piloting a new type of schedule for next year. The sixth grade should be with one teacher for two subjects and an activity. We could try this with one group of kids. Maybe they could be given an option. The seventh grade should be "blocked" as they were in the past. If teachers are given the same plan at a particular grade level, this would help kids and teachers tremendously. (6th grade should be "blocked" when they are not with their "homeroom" teacher.) The 8th grade should have the open schedule they now have. I firmly believe this would be the best kind of schedule for kids and teachers.

I'm not sure if this fits into a problem of scheduling, but lately I feel concern over using the computer in the classroom. I have attended several meetings concerning this, and I would really like time to incorporate computer activities in my science classes. I feel that teaming with another teacher is the answer. Many members of the staff know a great deal about the computer. I would like to share kids, ideas, activities and time with these teachers.

I feel bad that we have not yet contacted the staff on our work. I feel very enthused but isolated. Many staff members were mentioned in the kids' surveys and need to be informed about our results so far.

Educational Experiences Inventory

EDUCATIONAL EXPERIENCES INVENTORY
FOR ACTION RESEARCH ON CHANGE IN SCHOOLS PROJECT

Directions: Some questions are pre-structured and call for just a check mark or circle in answer. Other questions are open-ended; please use extra space if it's needed.

1. Your age (please) ______ 2. Sex ______ 3. School ____________________

4. Subject you teach ______________ 5. Grade of students you teach 6th ______ 7th ______ 8th ______ 9th ______

6. How many years of experience do you have teaching at the junior high? ____ In all? ____

7. What is the level of your previous education? B.A./B.S. ____; B.A. + 15 ____; B.A. + 30 ____; M.A./M.S. ____; M.A. + 15 ____; M.A. + 30 ____; M.A. + 45 ____; Other ____________________

8. How satisfied are you with your experience in inservice or staff development? (How well does it meet your needs, help you achieve your goals, etc.? Please circle one number on the scale below.)

very 5 satisfied	4	3 moderately satisfied	2	1 not very satisfied

9. How would you rate your success as a participant in prior staff development programs? (Please circle one number below.)

very 5 successful	4	3 moderately successful	2	1 not very successful

10. Why are you interested in the Action Research on Change in Schools Project? (Please answer this question as fully as you can. Why, for example, is it important to do this now as opposed to some other time in your life?)

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11. Was there a critical incident or realization that led you to decide to participate in the ARCS program? (If so, please describe.)

12. What are the major issues in your work or career right now? What do you want from your experience in the ARCS in relation to these issues? (Please answer this question as fully as you can.)

13. What are the major issues in your personal life right now? How do these issues relate to your participation or experiences in ARCS? (Please answer this, too, as fully as you can.)

14. Which is more important at this point in your life? (Please circle one number below.)

my 5 work and career goals	4	both 3 work goals and personal goals are equally important	2	1 my personal development goals

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15. Compared with other periods in your life, do you feel that you are now in a period of stability or transition in your life and work?

____ I'm in a period of stability ____ I'm in a period of transition

16. Please check below the statement that most nearly describes your situation at this point in your life. (If more than one statement applies, put a 1 by the statement that is most accurate, and put a 2 by the other relevant statement.)

____ Not much has changed for me in the last several years;
I'm in a stable situation with respect to my life and work.

____ I've just come through a huge transition period in my life and work.

____ I feel I'm consolidating a major period of personal and/or professional change.

____ I feel I'm just on the verge of making a lot of changes in my life and/or work.

____ Other: ____

____

17. Please circle one number for each statement below to indicate how "hard at work" you are on each of the following issues at this point in your life. Space is provided for comments to expand or qualify your answer.

a) Separating myself from my family and/or my parents' expectations

very 5 important- a key issue now	4 becoming increasingly important	3 somewhat important	2 just beginning to be important	1 not an issue now

Comment: ____

____

b) Parenting...raising my children as I'd like to (or deciding to be a parent)

5 4 3 2 1

Comment: ____

____

c) Starting a career and/or exploring family or community roles

5 4 3 2 1

Comment: ____

____

d) Being recognized for my contribution and achievement in roles I value

5 4 3 2 1

Comment: ____

____

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e) Accomplishing a few important things in the finite period I have left

5 4 3 2 1

Comment: ____

____

f) Seeing myself as an adult, becoming part of the adult world

5 4 3 2 1

Comment: ____

____

g) Making deeper investments in my choices for life and work; setting long range goals and meeting them

5 4 3 2 1

Comment: ____

____

h) Sharing my knowledge and skills, contributing to the next generation, being helpful to younger friends and associates

5 4 3 2 1

Comment: ____

____

i) Becoming my own person with identity and direction, not dependent on boss, spouse, colleagues, critics or mentors

5 4 3 2 1

Comment: ____

____

j) Sharing everyday human joys with others; maintaining warm relationships with friends, family, my spouse, and colleagues

5 4 3 2 1

Comment: ____

____

k) Accepting what has transpired in my life as "mine," valuing myself and my choices

5 4 3 2 1

Comment: ____

____

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l) Developing my sense of myself as an adult

5 4 3 2 1

Comment: ____________________

____

m) Changing my activities and ambitions to reflect more realistically who I am and what I want from my life and work

5 4 3 2 1

Comment: ____________________

____

18. Thinking about periods of your life as chapters in your autobiography, please give a chapter heading to the present period of your life.

____

How about a title for the period you just left? ____________________

____

What's your guess for a chapter heading for the next period of your life?

____

19. Has being a participant in prior staff development activities helped you make any changes in your life, or negotiate any transitions in your life or work? (Please circle the appropriate number below.)

no, 5 not really	4 slightly helpful	3 somewhat helpful	2 very helpful in transition	1 in some ways, those experiences created the transition

20. It would help to know the factors on which you base your answer to Question 19. If you indicated a program was helpful in negotiating a transition, could you indicate what you believe the transition to be and how the staff development program experience facilitated (or hindered) it.

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21. Learning Style Inventory*

This inventory assesses your preferred method of learning. As you take it, give a high rank to those words which best characterize the way you learn and a low rank to the words which are least characteristic of your learning style. Construe learning in a broad sense across a wide variety of activities, not only academic study.

Different characteristics in the inventory are equally good. There are no right or wrong answers. The aim of the inventory is to describe how you learn, not to evaluate your learning ability.

There are nine sets of words listed below. Rank order each set of four words assigning a 4 to the word which best characterizes your learning style, a 3 to the word which next best characterizes your learning style, a 2 to the next most characteristic word, and a 1 to the word which is least characteristic of you as a learner. Be sure to assign a different rank number to each of the four words in each set. Do not make ties.

1.	___discriminating	___tentative	___involved	___practical
2.	___receptive	___relevant	___analytical	___impartial
3.	___feeling	___watching	___thinking	___doing
4.	___accepting	___risk-taker	___evaluative	___aware
5.	___intuitive	___productive	___logical	___questioning
6.	___abstract	___observing	___concrete	___active
7.	___present-oriented	___reflecting	___future-oriented	___pragmatic
8.	___experience	___observation	___conceptualization	___experimentation
9.	___intense	___reserved	___rational	___responsible

FOR SCORING ONLY:

CE__________ 234578

RO__________ 136789

AC__________ 234589

AE__________ 136789

(Scoring will be explained at the ARCS meeting.)

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*The Learning Style Inventory is from Kolb, Rubin and McIntyre (Eds.), Organizational Psychology: An Experiential Approach, Prentice-Hall, 1974.

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Problem Identification Questionnaire

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ACTION RESEARCH ON CHANGE IN SCHOOLS

PROBLEM IDENTIFICATION QUESTIONNAIRE*

Name ______________________________

In the spaces provided below, please list five major problems you see facing teachers and/or schools today. After each problem you list, check the space which indicates what percentage of your peers would agree with you that this is a major problem even though they may disagree with you about how to handle it. (By peers, we mean persons who have your same professional role and are in your general geographic region.)

Problem	Less than 25%	25%-50%	50%-75%	Over 75%
1. ______________________________ ______________________________	____	____	____	____
2. ______________________________ ______________________________	____	____	____	____
3. ______________________________ ______________________________	____	____	____	____
4. ______________________________ ______________________________	____	____	____	____
5. ______________________________ ______________________________	____	____	____	____

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*Adapted from Tikunoff, W. J., Ward, B. A., & Griffin, G. A. Interactive Research and Development on Teaching Study: Final Report. San Francisco: Far West Laboratory for Educational Research and Development, 1979, 629 pp.

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Research-Teaching-Development Questionnaire

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ACTION RESEARCH ON CHANGE IN SCHOOLS

RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (Revised)*

Name ______________________________

The purpose of this questionnaire is to find out how skilled you believe you are in carrying out research and development in teaching. The items that follow are ones that list many of the skills and understandings believed to be related to effective research, development, and teaching. Indicate how proficient you believe yourself to be by circling the appropriate number as in the example below.

Sometimes we are familiar with a technique or body of knowledge even though we are not skilled in the use of the technique or knowledge. When you indicate "no skill" by circling response 1, indicate that you are familiar with the content of the item by placing an X on the line preceding the item. (Do not indicate familiarity for items in which you believe you are skillful or somewhat skillful.)

EXAMPLE

Highly Skilled	Somewhat Skilled	No Skill	
3	2	1	_X_ Ability to translate a teaching concern into a researchable question.

The person who responded to this example believes himself/herself to have no skill when it comes to stating a teaching concern as a research question although (s)he is familiar with the issue.

For each of the items that follow, please indicate how skilled you believe yourself to be regarding the content of the items. As in the example above, circle the number of the skill level which is appropriate. When you believe yourself to have "no skill," place an X on the line if you are familiar with the content of the item.

Highly Skilled	Somewhat Skilled	No Skill	
3	2	1	____ Knowledge of general principles of research design.
3	2	1	____ Knowledge of specific experimental and quasi-experimental designs.

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*Adapted from Tikunoff, W. J., Ward, B. A., & Griffin, G. A. Interactive Research and Development on Teaching Study: Final Report. San Francisco: Far West Laboratory for Educational Research and Development, 1979. 629 pp.

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (Revised)

Highly Skilled	Somewhat Skilled	No Skill	
3	2	1	____Knowledge of factors which jeopardize internal and external validity of research design.
3	2	1	____Ability to operationalize a research design into specific research procedures.
3	2	1	____Ability to identify and articulate a researchable problem.
3	2	1	____Ability to formulate testable hypotheses or researchable questions.
3	2	1	____Knowledge of specific questionnaire construction techniques.
3	2	1	____Ability to select appropriate standardized tests or instruments.
3	2	1	____Knowledge of sampling theory and techniques.
3	2	1	____Ability to make a distinction between an objective observation and a personal reaction to what is observed.
3	2	1	____Ability to plan data collection procedures appropriate to a research or evaluation activity.
3	2	1	____Ability to design and conduct interviews for the purpose of collecting data.
3	2	1	____Ability to construct instruments to assess attitudes and other affective variables.
3	2	1	____Ability to identify bias and/or prejudice in written reports of classroom events.
3	2	1	____Ability to use formal or informal systems of recording observations of behavior.
3	2	1	____Knowledge of instrument reliability, including types of reliability coefficients.
3	2	1	____Knowledge of instrument validity, including various approaches to determining validity.
3	2	1	____Ability to use library research techniques (e.g., indices to periodicals).

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (Revised)

Highly Skilled	Somewhat Skilled	No Skill	
3	2	1	____Ability to record classroom events accurately and objectively.
3	2	1	____Ability to determine relations between teacher behavior and student behavior.
3	2	1	____Ability to identify patterns of teaching behavior from a transcript of teacher-student talk.
3	2	1	____Ability to distinguish between a classroom problem and a symptom of that problem.
3	2	1	____Knowledge of techniques of classroom observation.
3	2	1	____Knowledge of procedures and steps in developing curriculum materials.
3	2	1	____Knowledge of at least one curriculum planning model.
3	2	1	____Knowledge of various instructional approaches that might be incorporated into curriculum materials.
3	2	1	____Ability to use field-testing techniques during preliminary tryout or implementation of new curriculum materials.
3	2	1	____Ability to diagnose an individual student's status in attainment of the basic skills.
3	2	1	____Ability to apply knowledge of individual students' abilities to the formulation of a program of instruction.
3	2	1	____Ability to plan an instructional sequence for a small group of students (4-8) in social studies.
3	2	1	____Ability to coordinate several instructional units for use by groups of students at about the same time.
3	2	1	____Ability to individualize instruction.

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (Revised)

Highly Skilled	Somewhat Skilled	No Skill	
3	2	1	____Ability to use ERIC or other information retrieval systems.
3	2	1	____Ability to establish criteria for evaluating research.
3	2	1	____Ability to conduct item analyses, including computation of difficulty and discrimination indices.
3	2	1	____Ability to choose appropriate statistical techniques for data analysis.
3	2	1	____Knowledge of descriptive statistical techniques (e.g., means, standard deviation, correlations).
3	2	1	____Ability to generalize from a set of discrete statements or conclusions.
3	2	1	____Ability to use standardized ("canned") computer programs (e.g., SPSS).
3	2	1	____Ability to read and interpret computer output.
3	2	1	____Ability to interpret and integrate statistical data into a meaningful presentation.
3	2	1	____Ability to organize and classify information into meaningful categories.
3	2	1	____Ability to use editorial skills on one's own writing or that of others.
3	2	1	____Knowledge of alternate methods of presenting data (e.g., graphs, tables).
3	2	1	____Ability to lead group discussions, moderate meetings, or facilitate constructive interactions among personnel.
3	2	1	____Ability to analyze critically a person's teaching behavior.

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (Revised)

Highly Skilled	Somewhat Skilled	No Skill		
3	2	1	____	Ability to prepare instructional materials appropriate to a student's developmental level.
3	2	1	____	Knowledge of at least one major theory of learning.
3	2	1	____	Ability to state student learning objectives in measurable terms.
3	2	1	____	Knowledge of techniques for assessing student achievement in relation to behavioral outcomes.
3	2	1	____	Knowledge of systems developed to categorize human behavior or abilities (e.g., Bloom's taxonomy).
3	2	1	____	Ability to sequence learning activities to facilitate student learning in curriculum or set of curriculum materials.
3	2	1	____	Ability to identify and articulate the objectives of the activity or institution.
3	2	1	____	Ability to identify and articulate the formal and informal decision making processes in the school.
3	2	1	____	Ability to analyze norms and values in the school.
3	2	1	____	Ability to analyze patterns of communication among teachers and administrators in the school.
3	2	1	____	Ability to identify patterns of change in the school.

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Organizational Environment Assessment Inventory

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ORGANIZATIONAL ENVIRONMENT ASSESSMENT INSTRUMENT[1]

For each of the items on the following pages, please circle the letter under the appropriate response.

Institutional Variable	A	B	C	D
Does the school administration have trust and confidence in teachers?	Have no confidence and trust in teachers	Have a little confidence and trust in teachers	Have substantial confidence and trust in teachers	Have complete confidence and trust in teachers
Do teachers have confidence and trust in the administration?	Have no confidence and trust in administrators	Have a little confidence and trust in administrators	Have substantial but not complete confidence and trust in administrators	Have complete confidence and trust in administrators
Is the behavior of administration supportive?	Behavior is not supportive	Behavior is somewhat supportive	Behavior is generally supportive	Behavior is fully supportive
What kinds of teacher motives are used by the school system?	Job security, economic needs, and the desire for status	Economic needs and moderate use of the desire for status, affiliation with peers and achievement	Economic needs, desire for status, affiliation with peers and the desire for achievement and new experiences	Economic needs, desire for status, affiliation with peers, achievement, new experiences and motivation arising from group goals

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[1] Taken from Pine, G. J., University of New Hampshire - Portsmouth Teacher Corps Project Final Report. Durham, NH: University of New Hampshire, 1979.

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	A	B	C	D
5. What kinds of attitudes have developed among the staff toward the school and the school's goals?	Strongly favorable and motivating	Usually favorable and motivating	Sometimes hostile and not motivating	Mostly hostile and not motivatin
6. What amount of responsibility does the school staff feel for achieving school goals?	Most personnel at all levels feel strong responsibility	Some personnel at all levels feel responsibility, but especially administrators	Administrators usually feel responsibility, other personnel feel very little responsibility	Only administrato feel responsibil
7. What is the amount and quality of interaction among members of the school staff?	Extensive, friendly interaction with a high degree of trust and confidence	Moderate interaction, often with a fair degree of trust and confidence	Little interaction and usually with a low degree of trust and confidence	Little interactio and always with fear and distrus
8. What is the amount of cooperative teamwork present in the school?	Very substantial amount throughout the school	A moderate amount through most of the school	Relatively little, only among a few people	None
9. At what levels in the school are decisions made?	Most are made at the top administrative levels	Policy decisions are made at the top, others are made at middle levels within stated policy	Policy decisions are made at the top, more specific decisions are made at all other levels	Decisions are ma throughout the school but linke through various kinds of grouping

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		A	B	C	D
10.	In what manner are school goals usually determined?	By means of group participation	Goals are set after discussions with teachers	Goals and orders are issued, opportunity for discussion may or may not exist	Goals are issued as orders
11.	Are there forces existing in the school that cause the acceptance, rejection or resistance of goals?	Goals are fully accepted	Goals are overtly accepted but with some overt resistance	Goals are accepted but often with some open resistance	Most goals are resisted or rejected
12.	Do teaches feel free to discuss important things about their jobs with their immediate superiors?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all
13.	Do teachers feel free to discuss important things about their jobs and the school with school administrators?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all
14.	Do immediate superiors (department heads and house leaders) generally try to get teachers' ideas and opinions in solving problems?	Always	Usually	Sometimes	Seldom

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15. Do immediate superiors make constructive use of teachers' ideas and opinions?	Always A	Usually B	Sometimes C	Seldom D
6. Is the information shared by administrators adequate?	Not at all adequate A	Adequate B	Somewhat adequate C	Very adequate D
7. Is the communication between teachers and the administration adequate?	Not at all adequate A	Adequate B	Somewhat adequate C	Very adequate D
Is the communication through house or department leadership to the administration accurate?	Not at all accurate A	Accurate B	Somewhat accurate C	Very accurate D
Is the communication between teachers adequate for achieving school goals?	Very adequate A	Adequate B	Somewhat adequate C	Inadequate D
How well does administration know and understand problems faced by teachers?	Know and understand very well A	Know and understand fairly well B	Don't know or understand very well C	Don't know or understand at all D

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How well do teachers know and understand problems faced by the administration?	Know and understand very well A	Know and understand fairly well B	Don't know or understand very well C	Don't know or understand at all D
To what extent can teachers influence the goals and activities of their teams and departments?	Not at all A	Very little B	Moderately C	Substantially D
To what extent can administration influence the goals and activities of teams and departments?	Not at all A	Very little B	Moderately C	Substantially D
Does the way in which decisions are made help to create the necessary motivations in those who have to carry out the decisions?	Substantially aids motivation A	Moderately aids motivation B	Aids motivation to only a small degree C	Adversely affects motivation D
To what extent are teachers generally involved in decisions related to their work?	Not at all A	Seldom involved but occasionally consulted B	Usually consulted but not often involved C	Substantially involved D
To what extent are teachers involved in developing special programs for students?	Not at all A	Seldom involved, occasionally consulted B	Usually consulted, often involved C	Substantially involved D

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Interview Schedules

Interview, September, 1981

1. Personal information

   Hobbies
   Marital status
   Number of children
   Professional periodicals read?
   Popular periodicals? Newspapers?

2. Academic background

   Degrees - where, when
   Assessment of professional education

3. Professional background and present positions

   How many years and where

4. Research and training experiences and orienations of participating team members

   a) Who do you consult when you need help with a professional problem?
   b) What do you think are the pressing problems in education today?
   c) What has been the nature of your participation in prior research and training activities? (in district and outside the district special projects)
   d) What do you think are the purpores of educational research? Any previous experience with educational research? What do you think of current educational research? How can educational research be improved?

5. Perceptions of the nature of action research

   a) What do you see as the purpose of the action research project?
   b) What do you see yourself contributing to the team?
   c) What benefits do you see for yourself? the school?
   d) Why did you decide to join the project?
   e) Do you see any potential problems?

Interview, December, 1981

1. What do you see as the roles you take on in the group process?

   What is your perception of the roles others take on?

2. What contributions can you make (bring to the action research process) now that we are beginning problem identification and data collection?

   What is your expectation of the contributions others will make?

3. Is there evidence of collaboration in the team meetings? Give examples.

4. Do meetings have a problem solving focus (as opposed to an information gathering focus)? Cite examples.

5. Have any of the above things changed at all since the beginning of meetings?

   What do you think we've accomplished in these first five meetings?

6. What questions do you have on the content or process of action research?

7. Any questions about the logs?

Interview, May, 1982

1. How would you now define action research?

2. How would you define collaboration as it applies to this project?

3. What do you see as your role(s) in this action research project?

   Has your role changed during the year? In what ways? What caused it to change?

4. What do you see as the role(s) of the university researcher?

   Has it changed during the year? How? What caused the change?

5. What do you see as the role of the research assistant?

   Has it changed during the year? How? What caused the change?

6. How would you describe the process the team has been through during the past year?

   Has the team process changed during the year? How? What has caused it to change?

7. Have other team members' roles changed during the past year?

   If so, how? What caused the changes?

8. How does the team reach decisions? Are all decisions made in the same way?

9. In what ways do you feel that the team and its process has been affected by school context issues and events?

10. What would you like to see come out of next year's continuation of the project?

Interview, December, 1982

1. Where do you think the team is now in terms of its action research project?

2. What do you see happening with the project between now and May?

3. How would you describe the group process over the past year and a half?

4. Do you see any differences in the team since Jack left? If so, what are they?

5. Do you see yourself playing a particular role on the team? What is it?

   Has your sense of that role changed since last year? If so, how? If not, why not?

6. What roles do you see other people in the group playing now? What are their contributions?

   Has your sense of what roles people play changed since last year? If so, how? If not, why not?

7. How would you describe the way the team works together? Do you see any patterns in the way the team works together?

8. How do you see the group making decisions? Has this process changed at all over the past year?

9. Are there any problems the group faces in working together? What are they?

10. Does being a member of the group affect you in any way?

11. Are there changes in the school context this year? Have these changes affected the team? If so, how? If not, why not?

12. How would you now define collaboration? Has your definition changed since the team began?

13. How would you now define action research? Has your definition changed since the team began?

14. How do you feel about writing the log? Does it serve a purpose for you?

QUESTIONS FOR INDIVIDUAL TEAM MEMBERS:

Brooks: You seem to feel comfortable telling the team about your personal concerns this year - is this true? How does this work for you? Does it serve a purpose for you? (e.g., problems with student giving her trouble and the administration)

2. How did you feel about confronting Ted during that

one meeting? Why did you choose to do it? In subsequent meetings, did your behavior toward Ted change?

Elliot: 1. You seem to express some discomfort with the project as it is going on at times - disagree and then give in. How do you really feel about it? What happens in these times? How do you explain your willingness to work on the computer programs and your negative comments?

2. What role (if any) do you think the UNH professor who has done research on teacher burnout should have in the project?

John: 1. What do you see as the difference between research and action research (In one meeting you said they were different).

2. Did being at the National Staff Development Conference affect you in any way - as a team member, teacher, person?

Ted: 1. How did you feel about the confrontation with Brooks in the meeting earlier this fall? What did you think it was about? Has it affected you as a team member, what you do on the team?

2. You seem to have more responsibility for your children (family) this year. Has this affected your team participation?

Interview, May, 1983

1. Looking back over the two years of the project, what stands out for you?

   What was the best part of the experience?
   What was the most disappointing part of the experience?
   If it was all to be done again, what would you keep? What would or should be done differently?

2. How would you describe the group process you have seen during team meetings over the two year period?

   Has it changed over time?
   Do you see any change in the relationships among people in the group?

3. How would you describe the research project the team carried out to someone who was not familiar with it?

   What was its purpose?
   Was the project valuable for you - personally? professionally?
   Was it valuable for the school?
   Do you see any connections between the team's research project and school context issues discussed by the team?
   Did the principal play a part in relation to the project? Did it change over time?

4. How would you describe your experience in presenting the project ideas at conferences or to other groups?

5. At AERA we were asked about the importance of the word "research" to what we were doing. How would you respond to that?

6. What part did you have in the research project? research process?

   Did either or both of these change over time? Why/why not?

7. Throughout the two years and then again at AERA, people raised the issue of time. Was time a factor in what happened in the group? Did it affect you particularly in any way?

8. Will there be any carry over from the project?

   What will you take from it? What will you use and how?
   Will the school be any different? How?

9. How would you describe the research the university researcher and research assistant have been doing during the past two years?

   How did you feel about being observed and interviewed?
   How would you describe the university researcher's and research assistant's roles? Have they changed over the two years?

10. You commented in earlier interviews about sometimes feeling the need for more leadership and structure at certain times during the project. Can you describe an experience or time when you felt that way?

Looking back, how did leadership get defined in the group? Did it change over time?

QUESTIONS FOR INDIVIDUALS:

As you know we've been looking at the group to see how people work on a collaborative action research team. We've begun to make some hypotheses based on our perceptions of what has gone on, and we'd like to check some of them out with you. It's important for us to find out what your perceptions are of what has happened. The next few questions are based on some tentative hypotheses - which you should feel free to contradict if you dissagree or see things differently.

John

1. After NSDC you seemed to have some different ideas, perspectives, goals for the project. Is that true? What changed for you then?
2. You and Brooks seem to have spent time outside of team meetings talking about the project. Did you ever make decisions about what to do and then bring them back to the team - like the decision to go with the teacher morale research project?
3. Some of your comments indicate that you see some of what has happened over the two years as real chance - we used the Michigan team's questions because they were there; we chose to investigate teacher morale because we had an instrument to measure it. How much of what happened over the two years seemed to be chance? How much was planned? Does that affect your sense of what the team accomplished?
4. You often seemed to serve as a mentor/caretaker for Brooks both on and off the team. Has that relationship affected your experience on the project in any way?
5. Others in the group seemed to have some trouble dealing with Ted's lack of assumption of responsibility. How did you feel about that over the two years?

Ted

1. All along you have said you wanted to have this project make a difference, not be filed away somewhere. Recently, others on the team have suggested that while that was your goal, they feel the process itself has been valuable, and that even if nothing happens in the school it was worthwhile. How do you feel about that?
2. I sometimes sensed a tension between you and other team members, especially Brooks, but occasionally Jack, about not pulling your share of the weight - doing particular tasks - on the team. After your argument with Brooks late in the fall you seemed to be taking on more jobs for the team.

   How do you feel about their perceptions?

   Did you see a change in what you did on the team after the argument with Brooks?

3. You seemed to be most active during team meetings when we got off onto tangential conversations about school policy, district politics, etc. Did you sense that? Why might that be?

Brooks

1. You commented at AERA that without this project you might not have signed your contract. Can you explain that a little more?

   You often shared personal and professional experience with the group, for example, telling us about the weekend workshop or your experiences with the administration. Were you comfortable doing this? Did it help you in any way? Did you do this less as we started data analysis?

2. Your relationship with Ted seemed to change over time. He was sort of ignored until this fall when you and he had an arguement. After that you said you didn't mind him so much - he seemed to be in a different place but he contributed interesting thoughts. Looking back, how would you describe what happened between the two of you?

3. You and John seemed to spend quite a bit of time outside of team meetings talking about the project. Did you ever make decisions about what to do and then bring them to the team - like the decision to do the project on teacher morale?

4. You took a big role in deciding to go with the teacher morale project (you said at one meeting that you "railroaded it through"), but later in the fall you seemed less active. Do you feel your position in the group changed during this time? How would you describe it?

Elliot

1. You seemed to go through a time at the beginning of this year when you had a lot of questions about the project. Then once you started working on the computer programming you became more accepting and involved. How do you see what happened during this time?

2. During the time when we did a lot of data analysis and worked on the presentations you seemed to take on a more dominant position - leadership role - in the group. How did you see that time?

3. You seemed to be very reluctant to use computer programs from UNH or from the UNH professor (not the team university researcher) when we got into data analysis. Why is that?

4. Others in the group seemed to have some trouble dealing with Ted's lack of assumption of responsibility. How did you feel about that over the two years?

Hunt Paragraph Completion Test of Conceptual Level

LEARNING STYLE QUESTIONNAIRE

On the following pages you will be asked to give your ideas about several topics. Try to write at least three sentences on each topic.

There are no right or wrong answers, so give your own ideas and opinions about each topic. Indicate the way you really feel about each topic, not the way others feel or the way you think you should feel.

In general, spend about 3 minutes for each page.

Code Number ______________________________ Date __________________

1. What I think about rules ...

Try to write at least three sentences on this topic.

2. When I am criticized ...

Try to write at least three sentences on this topic.

3. What I think about parents ...

Try to write at least three sentences on this topic.

4. When someone does not agree with me ...

Try to write at least three sentences on this topic.

5. When I am not sure ...

Try to write at least three sentences on this topic.

6. When I am told what to do ...

Try to write at least three sentences on this topic.

7. The best way for me to learn is ...

Try to write at least three sentences on this topic.

8. The most important thing in teaching is ...

Try to write at least three sentences on this topic.

Loevinger Sentence Completion Test

SENTENCE COMPLETION FOR WOMEN (Form 11-68)

Code Number ______________________________ Date ________________

Instructions: Complete the following sentences.

1. Raising a family
2. A girl has a right to
3. When they avoided me
4. If my mother
5. Being with other people
6. The thing I like about myself is
7. My mother and I
8. What gets me into trouble is
9. Education
10. When people are helpless
11. Women are lucky because
12. My father
13. A pregnant woman
14. When my mother spanked me, I
15. A wife should
16. I feel sorry
17. Rules are

SENTENCE COMPLETION FOR WOMEN (Form 11-68)

18. When I get mad

19. When a child will not join in group activities

20. Men are lucky because

21. When they talked about sex, I

22. At times she worried about

23. I am

24. A woman feels good when

25. My main problem is

26. My husband and I will

27. The worst thing about being a woman

28. A good mother

29. Sometimes she wished that

30. When I am with a man

31. When she thought of her mother, she

32. If I can't get what I want

33. Usually she felt that sex

34. For a woman a career is

35. My conscience bothers me if

36. A woman should always

SENTENCE COMPLETION FOR MEN (Form 11-68)

Code Number ______________________ Date ______________

Instructions: Complete the following sentences.

1. Raising a family

2. When a child will not join in group activities

3. When they avoided me

4. A man's job

5. Being with other people

6. The thing I like about myself is

7. If my mother

8. Crime and delinquency could be halted if

9. When I am with a woman

10. Education

11. When people are helpless

12. Woman are lucky because

13. What gets me into trouble is

14. A good father

15. A man feels good when

16. A wife should

17. I feel sorry

18. A man should always

19. Rules are

20. When they talked about sex, I

21. Men are lucky because

22. My father and I

23. When his wife asked him to help with the housework

24. Usually he felt that sex

25. At times he worried about

26. If I can't get what I want

27. My main problem is

28. When I am criticized

29. Sometimes he wished that

30. A husband has a right to

31. When he thought of his mother, he

32. The worst thing about being a man

33. If I had more money

34. I just can't stand people who

35. My conscience bothers me if

36. He felt proud that he

Rest Defining Issues Test of Moral Judgment

OPINIONS ABOUT SOCIAL PROBLEMS

This questionnaire is aimed at understanding how people think about social problems. Different people often have different opinions about questions of right and wrong. There are no "right" answers in the way that there are right answers to math problems. We would like you to tell us what you think about several problem stories. The papers will be fed to a computer to find the average for the whole group, and no one will see your individual answers.

Code Number ______________________________ Date ______________________

In this questionnaire you will be asked to give your opinions about several stories. Here is a story as an example. Read it, then turn to the next page.

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realizes that there were a lot of questions to consider. On the next page there is list of some of these questions.

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

PART A. (SAMPLE)

On the left hand side of the page check one of the spaces by each question that should be considered.

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
				✓	1. Whether the car dealer was in the same block as where Frank lives.
✓					2. Would a used car be more economical in the long run than a new car.
		✓			3. Whether the color green, was Frank's favorite color.
				✓	4. Whether the cubic inch displacement was at least 200.
✓					5. Would a large, roomy car be better than a compact car.
				✓	6. Whether the front connibilies were differential.

PART B. (SAMPLE)

From the list of questions above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd, and 4th most important choices.

Most important 5

Second most important 2

Third most important 3

Fourth most important 1

HEINZ AND THE DRUG

In Europe a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid $200 for the radium and charged $2000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and began to think about breaking into the man's store to steal the drug for his wife.

Should Heinz steal the drug? (Check one)

____ Should steal it

____ Can't decide

____ Should not steal it

HEINZ STORY

On the left hand side of the page check one of the spaces by each question to indicate its importance.

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
					1. Whether a community's laws are going to be upheld.
					2. Isn't it only natural for a loving husband to care so much for his wife that he'd steal?
					3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?
					4. Whether Heinz is a professional wrestler, or has considerable influence with professional wrestlers.
					5. Whether Heinz is stealing for himself or doing this solely to help someone else.
					6. Whether the druggist's rights to his invention have to be respected.
					7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
					8. What values are going to be the basis for governing how people act towards each other.
					9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
					10. Whether the law in this case is getting in the way of the most basic claim of any member of society.
					11. Whether the druggist deserves to be robbed for being so greedy and cruel.
					12. Would stealing in such a case bring about more total good for the whole society or not.

From the list of questions above, select the four most important:

Most important ___

Second most important ___

Third most important ___

Fourth most important ___

STUDENT TAKE-OVER

At Harvard University a group of students, called the Students for a Democratic Society (SDS), believe that the University should not have an army ROTC program. SDS students are against the war in Viet Nam, and the army training program helps send men to fight in Viet Nam. The SDS students demanded that Harvard end the army ROTC training program as a university course. This would mean that Harvard students could not get army training as part of their regular course work and not get credit for it towards their degrees.

Agreeing with the SDS students, the Harvard professors voted to end the ROTC program as a university course. But the President of the University stated that he wanted to keep the army program on campus as a course. The SDS students felt that the president was not going to pay attention to the faculty vote or to their demands.

So, one day last April, two hundred SDS students walked into the university's administration building, and told everyone else to get out. They said they were doing this to force Harvard to get rid of the army training program as a course.

Should the students have taken over the administration building? (check one)

___ Yes, they should take it over

___ Can't decide

___ No, they should not take it over

STUDENT TAKE-OVER

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
___	___	___	___	___	1. Are the students doing this to really help other people or are they doing it just for kicks.
___	___	___	___	___	2. Do the students have any right to take over property that doesn't belong to them.
___	___	___	___	___	3. Do the students realize that they might be arrested and fined, and even expelled from school.
___	___	___	___	___	4. Would taking over the building in the long run benefit more people to a greater extent.
___	___	___	___	___	5. Whether the president stayed within the limits of his authority in ignoring the faculty vote.
___	___	___	___	___	6. Will the takeover anger the public and give all students a bad name.
___	___	___	___	___	7. Is taking over a building consistent with principles of justice.
___	___	___	___	___	8. Would allowing one student to take-over encourage many other student take-overs.
___	___	___	___	___	9. Did the president bring this misunderstanding on himself by being so unreasonable and uncooperative.
___	___	___	___	___	10. Whether running the university ought to be in the hands of a few administrators or in the hands of all the people.
___	___	___	___	___	11. Are the students following principles which they believe are above the law.
___	___	___	___	___	12. Whether or not university decisions ought to be respected by the students.

From the list of questions above, select the four most important:

Most important ___

Second most important ___

Third most important ___

Fourth most important ___

ESCAPED PRISONER

A man had been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For 8 years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day Mrs. Jones, an old neighbor, recognized him as the man who had escaped from prison 8 years before, and whom the police had been looking for.

Should Mrs. Jones report Mr. Thompson to the police and have him sent back to prison? (Check one)

____ Should report him

____ Can't decide

____ Should not report him

ESCAPED PRISONER

GREAT importance	MUCH importance	SOME importance	LITTLE importance	No importance		
					1.	Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?
					2.	Everytime someone escapes punishment for a crime, doesn't that just encourage more crime?
					3.	Wouldn't we be better off without prisons and the oppression of our legal system?
					4.	Has Mr. Thompson really paid his debt to society?
					5.	Would society be failing what Mr. Thompson should fairly expect?
					6.	What benefits would prisons be apart from society, especially for a charitable man?
					7.	How could anyone be so cruel and heartless as to send Mr. Thompson to prison?
					8.	Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off?
					9.	Was Mrs. Jones a good friend of Mr. Thompson?
					10.	Wouldn't it be a citizen's duty to report an escaped criminal, regardless of circumstances?
					11.	How would the will of the people and the public good best be served?
					12.	Would going to prison do any good for Mr. Thompson or protect anybody?

From the list of questions above, select the four most important:

Most important ____

Second most important ____

Third most important ____

Fourth most important ____

NEWSPAPER

Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against the war in Viet Nam and to speak out against some of the school's rules, like the rule forbidding boys to wear long hair.

When Fred started his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organize protests against the hair regulation and other school rules. Angry parents objected to Fred's opinions. They phoned the principal telling him that the newspaper was unpatriotic and should not be published. As a result of the rising excitment, the principal ordered Fred to stop publishing. He gave as a reason that Fred's activities were disruptive to the operation of the school.

Should the principal stop the newspaper? (Check one)

____ Should stop it

____ Can't decide

____ Should not stop it

NEWSPAPER

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance		
___	___	___	___	___	1.	Is the principal more responsible to students or to the parents?
___	___	___	___	___	2.	Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
___	___	___	___	___	3.	Would the students start protesting even more if the principal stopped the newspaper?
___	___	___	___	___	4.	When the welfare of the school is threatened, does the principal have the right to give orders to students?
___	___	___	___	___	5.	Does the principal have the freedom of speech to say "no" in this case?
___	___	___	___	___	6.	If the principal stopped the newspaper would he be preventing full discussion of important problems?
___	___	___	___	___	7.	Whether the principal's order would make Fred lose faith in the principal.
___	___	___	___	___	8.	Whether Fred was really loyal to his school and patriotic to his country.
___	___	___	___	___	9.	What effect would stopping the paper have on the student's education in critical thinking and judgment?
___	___	___	___	___	10.	Whether Fred was in any way violating the rights of others in publishing his own opinions.
___	___	___	___	___	11.	Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school.
___	___	___	___	___	12.	Whether Fred was using the newspaper to stir up hatred and discontent.

From the list of questions above, select the four most important:

Most important ___

Second most important ___

Third most important ___

Fourth most important ___

WEBSTER

Mr. Webster was the owner and manager of a gas station. He wanted to hire another mechanic to help him, but good mechanics were hard to find. The only person he found who seemed to be a good mechanic was Mr. Lee, but he was Chinese. While Mr. Webster himself didn't have anything against orientals, he was afraid to hire Mr. Lee because many of his customers didn't like orientals. His customers might take their business elsewhere if Mr. Lee was working in the gas station.

When Mr. Lee asked Mr. Webster if he could have the job, Mr. Webster said that he had already hired somebody else. But Mr. Webster really had not hired anybody, because he could not find anybody who was a good mechanic besides Mr. Lee.

What should Mr. Webster have done? (Check one)

____ Should have hired Mr. Lee

____ Can't decide

____ Should not have hired him

WEBSTER

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
___	___	___	___	___	1. Does the owner of a business have the right to mak his own business decisions or not?
___	___	___	___	___	2. Whether there is a law that forbids racial discrimination in hiring for jobs.
___	___	___	___	___	3. Whether Mr. Webster is prejudiced against orientals himself or whether he means nothing personal in refusing the job.
___	___	___	___	___	4. Whether hiring a good mechanic or paying attention to his customers' wishes would be best for his business.
___	___	___	___	___	5. What individual differences ought to be relevant in deciding how society's roles are filled?
___	___	___	___	___	6. Whether the greedy and competitive capitalistic system ought to be completely abandoned.
___	___	___	___	___	7. Do a majority of people in Mr. Webster's society fe like his customers or are a majority against prejudice?
___	___	___	___	___	8. Whether hiring capable men like Mr. Lee would use talents that would otherwise be lost to society.
___	___	___	___	___	9. Would refusing the job to Mr. Lee be consistent with Mr. Webster's own moral beliefs?
___	___	___	___	___	10. Could Mr. Webster be so hard-hearted as to refuse the job, knowing how much it means to Mr. Lee?
___	___	___	___	___	11. Whether the Christian commandment to love your fellow man applies to this case.
___	___	___	___	___	12. If someone's in need, shouldn't he be helped regardless of what you get back from him?

From the list of questions above, select the four most important:

Most important ___

Second most important ___

Third most important ___

Fourth most important ___

THE DOCTOR'S DILEMMA

A lady was dying of cancer which could not be cured and she had only about six months to live. She was in terrible pain, but she was so weak that a good dose of pain-killer like morphine would make her die sooner. She was delirious and almost crazy with pain, and in her calm perioos, she would ask the doctor to give her enough morphine to kill her. She said she couldn't stand the pain and that she was going to die in a few months anyway.

What should the doctor do? (Check one)

____ He should give the lady an overdose that will make her die

____ Can't decide

____ Should not give the overdose

DOCTOR

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
___	___	___	___	___	1. Whether the woman's family is in favor of giving her the overdose or not.
___	___	___	___	___	2. Is the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her.
___	___	___	___	___	3. Whether people would be much better off without society regimenting their lives and even their deaths.
___	___	___	___	___	4. Whether the doctor could make it appear like an accident.
___	___	___	___	___	5. Does the state have the right to force continued existance on those who don't want to live.
___	___	___	___	___	6. What is the value of death prior to society's perspective on personal values.
___	___	___	___	___	7. Whether the doctor has sympathy for the woman's suffering or cares more about what society might think.
___	___	___	___	___	8. Is helping to end another's life ever a responsibl act of cooperation.
___	___	___	___	___	9. Whether only God should decide when a person's life should end.
___	___	___	___	___	10. What values the doctor has set for himself in his own personal code of behavior.
___	___	___	___	___	11. Can society afford to let everybody end their lives when they want to.
___	___	___	___	___	12. Can society allow suicides or mercy killing and still protect the lives of individuals who want to live.

From the list of questions above, select the four most important:

Most important ___

Second most important ___

Third most important

Selman: Interpersonal Understanding

Peer Group Organization Scoring Sheet

Peer Group Organization Scoring Sheet

Subject Number:

Name:

Age:

Issue Scores	Issue	Individual Issue Concept Scores
________	I. Group Formation	
	A. Motives	_ _ _ _ _ _ _
	B. Mechanisms	_ _ _ _ _ _ _
	C. Ideal Member	_ _ _ _ _ _ _
________	II. Group Cohesion	_ _ _ _ _ _ _
________	III. Group Conformity	_ _ _ _ _ _ _
________	IV. Group Rule-Orientation	_ _ _ _ _ _ _
________	V. Group Decision-Making and Organization	_ _ _ _ _ _ _
________	VI. Group Leadership	_ _ _ _ _ _ _
________	VII. Group Termination	_ _ _ _ _ _ _

Summary Data

Highest Reliable Score ____ Range ____

Average Issue Score ____ Global Score ____

Selman, Robert L. *Assessing interpersonal understanding: An interview and scoring manual in five parts constructed by the Harvard-Judge Baker Social Reasoning Project*, 1979. Available from the author.

APPENDIX C

ACTION RESEARCH AND GROUP PROCESS ANALYSIS

The Collaborative Process of Action Research: A Case Study

ARCS Report X

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-413-

ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT X

THE COLLABORATIVE PROCESS OF ACTION RESEARCH: A CASE STUDY*

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*Adapted from Doctoral Dissertation, Harvard University, 1984

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PART I

THE RESEARCH PROJECT AND PROCESS: THE NEW HAMPSHIRE TEAM

Introduction

During the two years of the project, the New Hampshire research team identified a researchable problem, designed and implemented a study to investigate that problem, and presented their results in a variety of forms. Although the process sounds linear, it was not entirely; the team frequently returned to redefine, redesign, and re-evaluate their project. In examining this process I have identified several patterns in the team's approach to and execution of its research project. In the first part of this report I will present a chronological description of the team's research project. I will then identify the overall sequence of research steps the team experienced, as well as some of the patterns they exhibited as they moved through these steps.

Some patterns related to the team's research project seemed to emerge as a result of teacher involvement in a school-based project. The school context, for example, seems to have influenced the team's project in several ways. First, it provided a set of problems from which the teachers chose a researchable issue. Second, certain school context dynamics, including decision making patterns and administrator-teacher relations affected the team's goals. Finally, some of these same dynamics led to a dichtomy between the research project and actual school practice.

Although four of the New Hampshire teachers had been involved in a Teacher Corps project at their school, none had ever conducted research directly related to their own work or work environment. Their participation in this project seemed to lead them to new definitions of action research, changing perceptions of themselves as researchers, and a more positive valuing of research and the research process. In the second part of this report I will present the patterns relating the school context to aspects of the team's research project and process, and will examine teachers as researchers over the two years of the project.

Chronology of the Research Project

In this section I will present a chronological description of the team's research during its two year project. The time divisions used suggest shifts in the team's focus and activity. Figure 1 summarizes this chronology.

Chronology: October - December, 1981. The research team spent from October to December, 1981, discussing the school context and the concerns they had about it. Through this process they were able to identify their research problem. At the first meeting, the university researcher re-introduced action research and the steps the team might take in carrying out a research project. Team members each identified and then discussed several problems they believed education faced today.

In the second and fourth meetings, team discussions focused

Figure 1

CHRONOLOGY OF THE RESEARCH PROJECT

Year 1	Research Issues and Tasks
Phase 1: October - December, 1981	Introduction to action research Problem identification
Phase 2: January - March, 1982	Research question Identification of specific questions within the issue of scheduling Data collection procedures: Staff Opinion Survey Letter to identify schools to visit School visit interview drafted School history ERIC search on scheduling Data analysis: Staff Opinion Survey Research design: Where do we go next?
Phase 3: March - May, 1982	Research question: The effect of school change on teacher morale Research design: Evaluation research Data collection procedures: Work on school visit interviews Possible use of student achievement scores Maslach Burnout Inventory and School Survey administered Interview with principal Research proposal written for National Institute of Education
Year 2	
Phase 4: September - December, 1982	Clarification of research question and design Data collection procedures: Preparation and administration of teacher interviews Discussion of school visits ERIC search on teacher morale Data analysis: Discussion of how to analyze MBI and School Survey

Figure 1 (continued)

Year 2 (continued)	Research Issues and Tasks
Phase 5: January - March, 1983	Data collection: Second administration of MBI and School Survey Data analysis: Analysis of MBI and School Survey Presentation of results: Drafting of final report
April - June, 1983	Presentation of results: Completion of final report Presentations at AERA and University of New Hampshire

on questions provided by the university researcher. The first set of questions asked teachers how change occurred in their school. The second set of questions asked about individual teacher and student change in the school. Team members used these questions as the basis for conversations about the role of the principal in their school, the role of the central administration and school board, and the changes in their school over the past fifteen years. They also raised particular issues of concern, such as low levels of communication and colleagiality among teachers and between teachers and administrators, poor teacher morale, and problems in scheduling that affected teachers and students.

During these first eight meetings, the team also discussed some of the parameters or goals of their research project. Two teachers suggested that the team do a group project on a school issue rather than individual, classroom-based projects, and the team agreed. Team members also questioned whether or not their project should create a change of some kind in the school, and if a teacher-initiated change was possible given traditional change and decision making patterns in the school and system. Team members had different ideas about the outcome of the project at this point: Were they involved in this project for personal satisfaction or to create a change in their school? Would the results be used or filed away somewhere? These questions frequently re-emerged for team members as they faced decisions about what data to collect, how to design the project, and how to analyse collected data.

During the fifth team meeting in November, 1981, one team member suggested that by researching scheduling the group could address several of the concerns they had identified in previous disussions, including the issue of low teacher morale. During the next two meetings, the group agreed that they would research scheduling. Because scheduling issues affected student learning and behavior and teacher planning, communication and morale, Elliot described it as "the absolute problem," one important for the team to investigate (Documentation, 11/18/81).

In December, 1981, the group focused on the question, "How can we make scheduling changes to benefit our school?" and identified issues which they might investigate in order to answer that question, such as ability grouping, the house or team system within which the school functioned, class length, and rotating schedules. They decided on several forms of data collection, including a survey of their staff to determine their opinions on these issues, site visits to other schools, and an ERIC search to find out what other research had been done on these scheduling practices.

Chronology: January - March, 1982. Between January and March, 1982, the team collected and analysed data, discussed their research design and questions, and planned future data collection procedures. During December, 1981, and January, 1982, the team designed and administered their Staff Opinion Survey to all school staff. They then collated and analysed the data and presented the results to the teachers and administration. Survey results indicated that of the nine scheduling issues listed, the staff's top three concerns were effective schools within a school, class length, and student ability grouping. Analysis of the Staff Opinion Survey led the team to consider the research design, or in their words, "Where do we go next?" Up until this point in the research process, the team had planned to describe a schedule or beneficial schedule changes, implement the changes, and evaluate them. This articulation of their design led again to questions of parameters and goals: Did they really have the power to influence or change the schedule? Should they develop an ideal schedule, or specific schedule changes for their school, or a philosophy or statement about good scheduling practices? They also discussed their concern that research results might contradict preferences indicated by teachers in the survey. How then could they implement the changes their research indicated would be beneficial? In answer to these questions, the group decided to research issues on scheduling and suggest several alternative schedules to the principal, although individual team members disagreed on the actual impact of their work on the school.

In February and March, 1982, the group returned to a discussion of specific researchable questions in the area of scheduling. They generated several questions on the topics identified by the Staff Opinion Survey as important to their colleagues: Is it necessary to have a team leader? What are those person's responsibilities? How is the team leader designated? Do teachers need training to work in a house or team? What subject areas should be homogeneously or heterogeneously grouped? One teacher tied all of the issues together under the question, "Is there enough flexibility in a school-within-a-school or house schedule to provide for heterogeneous and homogeneous grouping in different subject areas and to meet individual student needs?"

As teachers worked on clarifying their research question they also continued to generate and develop data collection procedures. One teacher began to compile a history of changes in the school during the past ten years. The team discussed possible tests to use in examining student achievement under different scheduling practices, wrote a form letter and sent it out to approximately twenty-five agencies and organizations requesting information about other schools they might visit, and began to write survey questions to use when they visited other schools. This focus on specific data collection procedures seemed to lead the team to question the nature of the data they wanted to collect. For example, they discussed desirable characteristics of schools they would choose to visit and what information they wanted to collect during those visits. These considerations and the need to begin to make methodological decisions led the team back to another re-examination of their research question and design.

Chronology: March - May, 1982. Discussions of data collection procedures in February and March, 1982, led the team to more complex discussions of research question and design in late March and April, 1982. Teachers continued to generate research questions about scheduling, such as "How do different scheduling practices affect student achievement?" and "Does an ineffective schedule cause poor teacher morale?" One teacher said she felt they needed to have a sense of what the entire research project would look like before they could proceed, which she compared to needing a recipe to bake a cake: "You can't bake a chocolate torte without having an idea of what it would look like" (Documentation, 3/31/82).

At the team's request, the university researcher and research assistant provided several models of research (evaluative, descriptive, research and development, experimental) and possible research designs based on questions the team had generated. The group discussed the models, questions, and designs in terms of their own preferences and what they thought was feasible within the time constraints of school scheduling practices and the two year research project. They also considered the nature of data they would need to collect to investigate each question, and possible data collection procedures useful in carrying out each design.

By the beginning of May, 1982, the team had decided to research the effects of scheduling changes (expected to occur in the school the following fall) on teacher morale. They planned to administer the Maslach Burnout Inventory (MBI) to teachers at their school in June, 1982, and again in December, 1982. Attached to the MBI would be a School Survey to solicit staff opinions about scheduling practices. The team planned to do follow-up interviews with a sample of teachers in the fall of 1982 to probe questions addressed in the MBI and School Survey and an interview with the principal of the school in May or June, 1982 to determine his scheduling goals and definitions of scheduling terms. They also agreed that they would visit other schools, where they would survey or interview teachers, although they did not decide what information these site visits would provide or how they would be used. The team saw this design as a form of evaluation research (Borg and Gall, 1979) in which they would evaluate changes made in scheduling practices in terms of level of teacher morale and job satisfaction. Their goal in carrying out this design was to make recommendations to the principal about effective, satisfactory scheduling practices at their school. The team spent its last meeting of the school year planning the administration of the MBI and School Survey. Team members administered the instrument to school staff during the last week of May.

Chronology: September - December, 1982. The team experienced two changes in membership in September, 1982. One team member, Elliot, remained with the team but moved to the high school to teach computer and math. Another team member, Jack, became principal of a middle school in Maine, and left the team.

The team spent the first several meetings of year two clarifying and refocusing its research question and design and deciding what data was needed to complete its research. Team members concluded that they were examining the effects of scheduling and other organizational changes in the school on teacher morale. Two team members generated a list of these changes to use as a reference in discussing their research results. As a result of this clarification, the team decided that they would not need data collected from other schools but would concentrate instead on interviewing selected teachers from their own school during November, 1982, re-administering the MBI and twenty-two item School Survey in December, 1982, and reading materials gathered through an ERIC search on teacher morale and teacher burnout.

During this three month period devoted primarily to data collection, the team began to consider techniques for analysing collected data. Except for a brief analysis of their initial Staff Opinion Survey in January, 1982, the team had done little or no data analysis up to this point. From September to November, 1982, most of their discussion of data analysis focused on how to collate and analyse data. They decided, for example, how to score surveys and identified computer programs which might be useful in analysing patterns or trends. Actual data analysis did not begin until December, 1982.

Refocusing the question and considering methods of data analysis led the team to discuss how their results might be presented, to whom, and to what end. They debated again the possibility of presenting recommendations to the school principal and the likelihood of a change resulting from their proposals. During one team meeting, Elliot described the project in its relation to school change:

> In terms of the visitations, last year we were looking for a good schedule for our kids, but we've come to realize that we have no effect on changes. We saw some changes occurring that we had no control over, and we were not in a position to dictate changes. What we are doing is good, showing the effects of the changes on teacher attitude.
>
> (Documentation, 10/13/82)

The team also began to look at their project in the larger context of research on schooling, discussing who might read the report and why, and how others might be able to do comparative or follow-up studies using this project as a starting point.

Chronology: January - March, 1983. From January until March, 1983, team members focused primarily on analysing the data they had collected and deciding how to write their final report. They also began to write the report and the presentations they would make at the American Educational Research Association (AERA) conference in April and a University of New Hampshire faculty colloquium in May.

One team member, Elliot, developed computer programs which allowed the team to analyse data collected from the May, 1982, and December, 1982, MBI and School Survey. The computer program classified each school staff member as high, moderate, and low on each of the six subscales on the MBI. The university researcher ran t-tests and found no significant shift in scores on any MBI subscale from May to December.

The team grouped the twenty-two questions from the School Survey into categories including teaming, grouping, communication with administration, communication with colleagues, and time management/planning. They found some shift in teacher responses on these questions from May to December, 1982, and found that teachers in different subject areas responded differently to certain items. The team also analysed how school staff members, ranked high, moderate, and low on each subscale of the MBI, responded to each item on the post test of the School Survey. While results differed from question to question, the team found that in general, staff members who felt more stressed tended to feel less satisfied with existing opportunities for communication with colleagues and administrators and with time available for planning. Complete results of the team's research can be found in their final report to the National Institute of Education (see Appendix D).

Chronology: March - May, 1983. In March and April, 1983, the team drafted its final report and presented its research process and findings at AERA and at a University of New Hampshire class and faculty colloquium. Team members chose to write their final report as a group; much of the writing was done at four all day meetings held during school vacation or on Saturdays or Sundays in March and April. The team decided to divide the report into seven sections: research problem, research question, related literature, methodology, findings, conclusions, and implications for further research.

As team members discussed the sections on research problem and question, they reviewed their research process, trying to piece together a description of what they had done. They explained that they had begun with the issue of scheduling in an attempt to address staff concerns as identified in their initial Staff Opinion Survey. In retrospect they noted that they had shifted to the issue of teacher morale for several reasons:

- scheduling proved to be too large and unwieldy as a research problem,
- the issue of teacher morale was connected to many of the same concerns as scheduling (teaming, ability grouping, opportunity for staff communication),
- they had found an instrument which measured teacher

morale, and

- one team member showed strong interest in the issue of teacher morale, and, in her words, "railroaded it through" (Documentation, 3/13/83).

As a result of their discussions and writing, the team decided it had actually investigated three questions:

1) Do organizational changes effected between 1981-82 and 1982-83 at the junior high school affect school staff morale/job satisfaction?

2) Do organizational changes at the junior high school affect school staff's perceptions of teaming, grouping of students, communication with colleagues and administration, time management, and teaching assignment?

3) Is goal clarity and involvement in policy decision making related to staff morale/job satisfaction? (Blomquist et al, 1983)

The team's presentations at AERA and the University of New Hampshire began with a brief history of collaborative action research and a description of the Action Research on Change in Schools project. I carried out this section of the presentation in my role as research assistant to the team. Elliot and Ted prepared a description of the research project the team had conducted, including the research questions, methodology, and findings. Brooks talked about the teacher as researcher: her perceptions of the research process and her experience in it. John discussed a timeline display of the team's research project. He also explained how the project had served as staff development for him and what he would take from it into his own work. The team presented its final written report to NIE and to the school principal and staff in May and June, 1983.

Patterns in the Research Process

Steps of Action Research

The chronology presented suggests that the team moved through a series of steps in conducting its research. Each research step is characterized by the particular research tasks or issues addressed by the team during that time. Tikunoff, Ward, and Griffin (1979), in their analysis of the research process of two collaborative action research teams, indicate that the groups they observed worked sequentially through eight research steps:

1) Identification of an issue to be studied

2) Selection of research strategies

3) Nature of data to be collected
4) Data collection procedures
5) Preparation of research design
6) Data collection
7) Data analysis
8) Development of conclusions to be reported

(Tikunoff, et al, 1979, p. 148)

Analysis of this team's research project shows that they experienced a general movement through the following steps:

1) Identification of a problem
2) Identification of researchable questions within that problem
3) Discussions of methodology
    a) Data collection procedures
    b) Nature of data to be collected
4) Preparation of research design
5) Data collection
6) Data analysis
7) Presentation of results

The chronology and Figure 1 indicate, however, that within this overall sequence the team frequently cycled back into earlier steps or worked simultaneously within several. Their process tended to be cyclical or recursive, an indication of their perception of the interconnectedness of the steps of the research process. The teachers themselves described recursion as an integral part of action research:

> John: Action research is on-going, and as the answers to your questions come up or a shift in what you want to research comes up you just keep right on going researching, whichever direction.
> (Interview, 12/82)

The team meeting on November 17, 1982, illustrates the team's fluid movement among research steps. At that meeting the university researcher suggested to the team that they might want to consider the question, "How does teacher morale affect student achievement?" as a part of their study. The team discussed this question, and generated a list of possible kinds of data which might help them answer it, including student test scores, student grades, and discipline records which could be correlated with changes in teacher morale (as measured by the MBI). They also considered the feasibility of including these data collection procedures in their research design, and decided that time factors prohibited an in-depth examination of the question. The team discussed the idea that the assumption of a correlation between teacher morale and student learning guided their research; their goal in studying teacher morale was in fact to make the school a more comfortable and effective environment for both teachers and students. They decided to rely on previous work, reported in their literature review, to substantiate their assumption and suggested that others who followed them might pursue the question more systematically. They concluded that it was the nature of action research to leave the researchers with questions for future investigation. During this one meeting, team members addressed issues of the research question, methodology, design, as well as the goals and parameters of their research project. Again, they did not necessarily progress sequentially through these steps, but discussed them as they arose, frequently circling back to address a new idea or an unresolved concern. This meeting is especially representative of those held between December, 1981, and December, 1982. Meetings held at the beginning of the project (October - December, 1981) tended to focus on problem identification, and meetings toward the end (January - May, 1983) were primarily concerned with data analysis and presentation of results.

Another characteristic of the research process was the team's tendency during year one to work on more concrete aspects of the research, such as designing data collection tools, before they had clearly determined more abstract parameters of research question, design, and the nature of data needed to conduct their research. Having identified a researchable problem - scheduling - the team spent much of the time it devoted to the research task between December, 1981, and March, 1982, discussing possible data collection procedures.

During January, February, and March, 1982, for example, data collection led the team to re-examine the overall project design and goals. Continued discussion and design of data collection tools (interviews for school visits, school history) tended to promote discussion and re-evaluation of more specific researchable questions within the topic of scheduling. The team therefore seemed to work outward from concrete data collection procedures to the more abstract research steps of identifying a research question, choosing a research design, and establishing goals and parameters of the project. John, for example, described the team's decision about its research design as the result of their discovery of an instrument (the Maslach Burnout Inventory) to measure teacher morale (Documentation, 3/13/83).

This ordering of research steps may have arisen out of the general and somewhat amorphous nature of the team's initial research question, "How can we make scheduling changes to benefit our school?" The team saw data collection procedures as one way of informing themselves about specific areas to investigate within the broader area of scheduling. For example, Jack said that the Staff Opinion Survey "isn't research; it's data gathering to tell us what to research" (Documentation, 1/13/82). The data collection in this case was not research but a preparation for future research. Team members may have felt more comfortable starting with concrete data collection procedures than with unfamiliar issues of design and methodology.

Team members' discussion of their goals for the project during the first year also suggest that they were not clear about the purpose of this research project and what, if any, impact it would have on the school or themselves as teachers. During several meetings, team members discussed how useful their research would be to themselves, to their colleagues, and to other practitioers and researchers. As a result of their lack of power to initiate and implement change, they saw their research as collecting information for others to use.

> Ted: The problem solving thing ...., the only thing that bothers me about that is the fact that we don't have any power, so to me I can't see it as problem solving. ... I see it more as a gathering of information which I hope will be used for people who care about kids to solve problems.
>
> (Interview, 12/81)

Because they had mixed feelings about the project and its value to the school or themselves, team members may have focused on concrete data collection procedures rather than long term and at that time unanswerable questions of research design and outcomes.

A shift occurred in this pattern at the end of year one and beginning of year two. Team members were able to use the research question and design clarified in April and May, 1982, to guide decisions about the kind of data they needed to collect and appropriate data collection tools. For example, in September and October, 1982, they decided that information from other schools was no longer relevent to their project, and chose not to follow up on the letters of inquiry sent out in year one. In retrospect, teachers explained their decision as the result of several factors: after Jack left the team no one indicated interest in visiting other schools; they had found few schools similar enough to compare to their own; they could not state a research question which required collecting information from other schools; and they discovered that school visits were no longer "related to what we were doing" (Documentation, 3/13/82). Team members also decided that follow-up interviews with a sample of teachers from their own school were necessary, and they designed an interview schedule to elicit the information desired. This shift in the team's process toward allowing the nature of the data needed to determine data collection tools thus appeared to be the result of team members' clarification of their research question and design and their greater familiarity and ease with research procedures and demands.

The change in the team's approach to its research project may also be related to the change in team members' goals in the second year of the project. By year two, most team members no longer believed that changing the school was their primary goal. They focused instead on personal growth and their contribution to research on schooling. They were therefore freed from the constraints of designing a project to meet the perhaps unreachable endpoint of school change. The team could then consider a research question and design which related to the school but which did not depend on teacher power to create change in order to be successfully completed. Once the team reached this point, research question and design could guide data collection instead of vice versa.

The school context and the research project

The research project was influenced by the school context at several different points during the two year period. The school environment first provided a framework within which the team identified a research problem, designed the research project, and chose methods for conducting its research. As the project progressed, team members' perceptions of the possible impact of their work and of their role in the decision making process in the school influenced their project goals, the form of their final report, and their assessment of how their findings would be used. Their sense that they had no real power to influence school change eventually contributed to a dichotomy between their research and the practical school based problems from which they had generated the project. These issues are discussed in the sections which follow.

School context and research question, design, and method. During their first eight meetings in October and November, 1981, team members discussed school context issues as a way of fulfilling the action research expectation that their research problem would be school based. During these early meetings, the team pointed out that decisions were made unilaterally in their school and system. Even when administrators occasionally asked for teacher opinion and input, they then tended to proceed with their initial plans. Team members also discussed low levels of teacher morale in the school, revealed in teachers withdrawing to their own classrooms, not communicating with one another, and performing minimal job requirements and no more. The team attributed low morale to the number of policy changes that had occurred over the past ten years in the school and suggested that perhaps the new principal would be able to improve the school's teaching and learning conditions. They decided that because teachers lacked the time needed to meet students' needs and communicate with colleagues, they would investigate scheduling issues. Thus their research problem emerged from school context concerns.

In deciding how to go about investigating their problem during year one, teachers again considered contextual issues, especially the key role of the principal in making policy decisions and changes. In December, 1981, John suggested that they consult the principal before choosing specific issues to investigate, so that the team would "spend (their) time on the ones which are possible" (Documentation, 12/16/81). In May, 1982, two team members decided to interview the principal about his definitions of some of the terms (teams, grouping, house coordinators) being used in the school. Ted asked if that would cause the team to base their research on what the principal wanted. Brooks replied, "We have to start where we are and then build something to change it" (Documentation, 5/5/82).

During the first year, the team tried to take school givens into consideration in planning their project so that their results would be usable in the existing context. By the end of the first year and into the second year, they were also noting that a number of school context variables beyond their control shaped their research design. For example, Ted noted that the team could not do a research and development project because there were too many obstacles, including administration unwillingness and lack of time. Elliot agreed, pointing out that research and development required total institutional commitment, and Ted said the school principal would never abdicate that much responsibility and power (Documentation, 4/14/82). In retrospect, team members saw the shift in their research focus from scheduling to teacher morale as the result of changes made by the principal and their own lack of power as school policy makers. John said,

> We came up with six things on the Staff Opinion Survey that were teachers' concerns, and we dropped two because the principal changed class length and department chairs were appointed. We dealt with the other four - we thought of dealing with them on the scheduling basis but we couldn't do that, and since the changes took place we thought we could measure the effects of the changes on the teacher burnout we saw.

Elliot agreed:

> We had the sense that our recommendations wouldn't be followed anyway, and on the burnout issue, no matter what changes they made we could measure the results of those changes.
>
> (Documentation, 4/27/83)

The team also based their decisions of when to interview other teachers and which team members would interview particular colleagues on their perceptions of the school context. For example, despite their sense in May, 1982, that they should interview a sample of teachers at that time (before changes were made in September, 1982, which might influence responses), team members chose to postpone these interviews until the fall. Their reasons included end of the school year demands on their own time and their perception that the same demands would make their colleagues unapproachable and uncooperative. When they did interview teachers in November, 1982, each team member interviewed those staff members with whom he or she felt comfortable. One team member pointed out that this was necessary because, "There are some people in the school who won't talk to me" (Documentation, 11/3/82).

School context and project goals. All of the team members began the project expecting to work on a problem with the goal of reaching a solution which would benefit teachers and students in the school. When asked in initial interviews what goals they saw for the project, four out of five hoped for direct gain for the school:

> Ted: I hope when we focus on something it will be something that all of us can bring back into our classrooms. At least meet some of the needs of the pupils here and not be something that's going to be filed away.
>
> John: I would assume it would be on our daily dealing with students and dealing with teams within our particular area ... where these problems come up and trying to find help for the problems.
>
> Brooks: Hopefully it would establish a dialogue within the school -- of some concerned teachers, of what's happened to us, where we've been, what has really transpired. There's a lot of things that have happened that need to be talked about.
>
> Jack: (The goal is) to look at some of the problems that maybe are unique to this school but also affect junior high education throughout the country.
> (Interviews, September, 1981)

Elliot, too, saw gains for teachers and students, but felt those gains would be limited to those who had participated in the project.

As team members discussed a research problem and design during the first year, they re-assessed their project goals. In every discussion of goals, team members raised the issues of their lack of power to implement change in the school and the unquestioned authority of the principal. Despite their interest in creating a change to improve the school, some team members began to advocate goals of personal satisfaction instead. When Ted suggested, for example, that they should attack the power structure or get the administration involved in some way in order to have a greater impact in the school, Jack told him they should do the project for personal satisfaction, because it was "fantasy island to think that (administrative) involvement could happen" (Documentation, 10/28/81). John later told Ted that it would be nice if the project was used but that "it's not necessary." He noted that he felt the contacts he established with other teachers through sharing his logs had already made the project worthwhile for him (Documentation, 11/18/81).

During discussions of research goals in year two, teachers began to shift away from a desire to make specific recommendations for school change. They began instead to emphasize the value the project had for them as individuals and for the school system and its use as a model of the action research process for teachers and administrators in other schools. During the second year of the project, John had several conversations with the assistant superintendent of schools about the project and presented a summary of the team's work to the system's staff development committee as an example of an effective staff development project. In planning their presentations for AERA, teachers decided to include a description of the process they had experienced, "So that other people can see how to get where we have gotten ... also so people wouldn't give up when they got to a hard place - they could see it could be done" (Documentation, 2/9/83). When the university researcher asked, "Why did the group choose an issue like scheduling rather than a classroom issue over which they had more control?" team members stressed the value of the process of action research. Brooks said that the schedule would be whatever the administration wants, but that "even if we don't impact our school, we may affect other schools." John summarized the conversation saying, "Way back, we three said it would be nice if it counted but it doesn't matter ... It's going through the process from here to there that matters. What the principal does doesn't matter" (Documentation, 2/22/83). At AERA, Brooks said that as a result of her participation in the project, "I now sense I have some respect, some importance not only as a classroom teacher but beyond that. ... Research is an important part of my life now - the process more than the product" (Documentation, 4/13/83).

In response to the university researcher's question, "What will happen to our data?" team members emphasized the importance of modeling the process of collaborative action research for others. John said that the administration would do what they wanted regardless of the report but that the project could affect the supervisory union as a whole through the staff development committee. Elliot pointed out that the administration had never promised to listen to the team and that the team was "working to further the cause of educational research." Brooks said she did not mind if the administration did not use the project, but that it was important to "keep collaborative action research going" (Documentation, 2/22/83). Team members' changed goals seemed to occur as a result of their questions, raised in year one, about their ability to implement school change. By abstracting the goals of the research from the school and focusing on the value of the project to themselves and others, team members no longer had to try to create changes in school policy over which they had no control.

Team members also expressed respect for the principal's domain and a desire not to infringe on his territory. Throughout the two years, they debated whether or not to make specific recommendations to the principal at the end of the project. As they began to write the final report in spring, 1983, they faced a final decision on this issue. Several teachers said they could not tell the principal how to run his school. They agreed to report their findings without making suggestions or recommendations or providing the principal with what Elliot called "unsolicited opinions" (Documentation, 3/27/83). In describing the report in her final interview, Brooks said:

> I really thought that it came out really good. I really felt that it said what we wanted it to say without stepping on anyone's toes, without negating all the time and energy that we had spent on the research and without getting into anyone else's personal space.
>
> (Interview, 6/6/83)

The team's goals as reflected here suggest not only a perceived lack of power to create change but also a recognition and acceptance of given domains of teacher and principal. Team members felt that if change was to result from their project, it had to take place within accepted patterns of power and responsibility in the school.

The school and the research: A dichotomy. In the first section on school context I described how the team originally generated a research problem and design from the school context. In the second section I noted that as a result of contextual limitations, team members began to de-emphasize school related outcomes and focus on achievable goals of personal and professional growth and on modeling a process for future action researchers. Partly as a result of this shift, team members increasingly saw school context variables as less important in their research and set up a dichotomy between the research they were doing and actual school practice.

In the first year, the team showed a draft of its first school opinion survey to the principal and solicited his suggestions for modifications and additions. They also gave him the results of the survey and believed that he considered those results in making policy decisions for the following year. John explained that "the principal was pretty sure he knew the answer, but now he's got a survey telling him the answer. ... He can use our survey to back up points, points which he might have already had but at least he's got a survey to prove it now" (Interview, 5/82).

During the second year the team moved away from including the principal and his ideas in the project. The principal's input was not sought after September, 1982, and the team debated at the end of the project whether or not to invite him to a team meeting to respond to their final report. During this debate, Brooks pointed out that she did not think the principal had any ownership in the project; she felt less comfortable sharing the research results with the school administration than with people outside of the school. By limiting their interaction with the prinipal, partly the result of increased time spent on research tasks and partly due to their de-emphasis on school-oriented goals, the team separated its research from school practice. In his final interview, John said, "I think the school context and our research basically didn't have anything to do with each other because they were two separate things going on at the same time" (Interview, 6/83). The team did finally invite the principal to attend a meeting and respond to their report, although they agreed in advance that they would not make major revisions as a result of their conversation with him. The principal indicated to the team that he was glad they had done the research and that he hoped some of the negative findings would change in the next year or so. He did not, however, suggest acting on the team's conclusions in any specific ways, reinforcing their feeling that their work would not lead to school change. According to John,

> I feel he has too many preconceived notions and he's very firm and set in them. And I think even the minor, little points are explosive coming out of that report but I think he will sidestep them.
> (Interview, 6/83)

During the first year, team members also showed a concern for informing colleagues of their work. For example, they chose to administer their first School Opinion Survey to all teachers rather than a sample, so that no one would feel "left out." Brooks noted that "other teachers have to have input too in order to own it; otherwise they would ignore it" (Documentation, 12/16/83). The team saw the survey as "good public relations" as well as a data collection tool.

During year two, team members were less concerned with including colleagues in the process as a way of gaining staff acceptance and eventual ownership of the project. This parallels the shift away from including the principal in the project, which also occurred during year two. When writing a cover letter for the second administration of the MBI and School Survey in December, 1982, one team member asked if they should include a statement about looking for changes from spring to fall. Another team member said, "No, don't tell them any more than they need to know ... if they want to know about it they'll ask" (Documentation, 12/1/83). Although the team eventually posted MBI results and distributed the report to the faculty, they no longer seemed to feel that staff acceptance was a crucial element of the project or its success. Their decreased concern for sharing the research with the staff again illustrates their separation of the research project and school context.

Team members also expressed their perception of a division between their research and actual school practice in their discussions of several data collection procedures. They tended to see data collection either as gathering information for the school or as research, although occasionally one procedure served both purposes. For example, in discussing the first school survey, teachers began to separate what they would research and how they might affect the school:

> Elliot said that they put out the questionnaire to find out information on what to research, that their mission was not to influence the schedule as much as possible. Ted said it would be a nice side product, and John said it wasn't likely. Elliot said they were not a power group.
> (Documentation, 1/27/82)

When the team discussed visiting other schools, they again separated their research from school practice. Jack said he saw two purposes in site visits: gathering data for the research and gathering practical information for use back at the school that was not necessarily relevent to the research (Documentation, 5/26/82). In retrospect, team members also perceived that the purpose of their interview with the school principal in May, 1982, was to "get the principal more in touch." Having done it, they saw no further use for it in their research project.

The university researcher and I, in the role of research assistant, had understood that the purpose of attaching the twenty-two item School Survey to the MBI in May and December, 1982, was to determine whether or not a relationship existed between teacher morale and teacher opinions about scheduling issues. Teachers, however, repeatedly noted that their research was on teacher morale, as measured by the MBI. Several times in the fall of 1982, they asked one another why they were doing the School Survey at all. Brooks responded at one point that they would use it to make recommendations about scheduling. Elliot said the School Survey was separate from the MBI; they used it because they wanted more information from teachers (Documentation, 3/13/83). In his final interview, John noted that the School Survey had little to do with the team's planned research:

> I think I was the one who brought up the point, well gosh, let's just ask them all these few simple questions mostly to see how we do in relation to the Michigan school ... It was more of an afterthought; it wasn't something we were planning to do at all.
> (Interview, 6/83)

In their final report the team presented the results of both the MBI and School Survey, but as they carried out the research they tended to differentiate the two data collection devices.

Thus teachers seemed to separate much of the research they were doing from information gathered which would be of immediate or direct use to the school. Their perceived lack of control in the school and their subsequent shift away from school based goals led teachers to carry out an action research project which contributed to knowledge and theory about teacher morale but had little immediate effect on the school. In his final interview, Ted noted that the project was only of use to "a limited number of people. Maybe we could add it to the amount of knowledge about burnout - our report will be quoted someplace, be printed up somewhere" (Interview, 6/83).

Teachers themselves attribute their separation of research and practice to their given school context. When asked by a University of New Hampshire faculty member if the project would bring about change in the school, Ted replied, "We hope it does, but I guess there's no way you can guarantee that would happen. I don't know any principal who would give you that authority" (Documentation, 3/16/83). In making recommendations for further research, Elliot suggested "marrying collaborative action research with an actual change project, and have the administration participate" (Documentation, 5/25/83). In their final interviews, Elliot, Ted, and Brooks noted that if they had it to do again, they would involve the principal in the project as a way of ensuring the team's ability to affect school practice:

> Elliot: I'm saying that thinking over again what happens, I guess if you don't directly involve the authority figure then at least you have to build a wide base of power so that the authority figure needs to come to you and needs to become involved. Even if it's involvement ... on some secondary level, not as a member of the team but as somebody who is continually advised as to what is going on ... If that happened here then the principal would have been more conversant with the possible values of what we found out and what we did.
>
> (Interview, 6/83)

> Brooks: I think that administrators, if they are going to have an action research project in their school either have to be close to that in terms of knowing - if they're not part of the group - just be real close to knowing what's going on so that they can foresee ... changes that might happen and prepare themselves and not feel like that research group 'done it to me again' ... I wonder if that's what we've done to our principal. We brought up some issues that he does not want to address or didn't even think about addressing, or maybe he doesn't have the skills to address them.
>
> (Interview, 6/83)

The team's experience illustrates the difficulty of producing generalizable theory and change in educational practice through action research. In this case, much of that difficulty seemed to be the result of school context variables which ultimately limited teacher opportunity to implement change.

Teacher as Researcher

Despite their perception that their work would have little effect on the school, team members believed that the two year experience had been worthwhile. The value lay in individuals' increased feelings of confidence, expertise, and understanding of both research and the school context. It also grew out of teachers' belief that their work provided a model for other school practitioners who wanted to try action research. As several team members pointed out in their final interviews, the project was successful because they had shown that teachers could indeed be researchers.

The development of teachers' belief in the value of their work is reflected in several strands or patterns. First, teachers' definitions and understanding of action research changed over time. The definitional changes which occurred grew out of team members' experience in the project and allowed teachers to explain and legitimize the process they had experienced. Second, teachers' perception of themselves as researchers evolved over time, shifting in at least one case from a teacher feeling he knew nothing about research to describing himself as an expert in this particular area. Finally, as a result of clarifying what was meant by action research and developing a sense of themselves as researchers, team members began to identify ways in which the action research process could be of further use to them in their classrooms, school, or professional careers. Each of these patterns is discussed below.

Definitions of action research. During initial interviews in September, 1981, we asked team members about their experience in educational research and their opinions of research in general. Three of the five explained that they had done little or no research outside of developing courses and curriculum. Those who expressed opinions about research said that it should affect teaching and learning in some way. Jack, for example, said that the purpose of doing research in many cases was "to write somebody's doctor's thesis." He also noted that research

> can be beneficial, but I think you really have to identify a specific problem, zero in on it ... and come up with some conclusions. But if the conclusions you come up with aren't going to have any effective change on your staff or on education then it's a waste of time.
> (Interview, 9/81)

The university researcher introduced action research and the steps in the research process to the team during their first meeting in October, 1981. Between that meeting and March, 1982, team members did not discuss the terms "research" or "action research," concentrating instead on identifying researchable problems and conducting their first Staff Opinion Survey. At a meeting in late March, the university researcher reminded the team that they had to submit a research proposal to the National Institute of Education by the end of the year. This sparked a discussion about what the team had done and planned to do, and how their actions corresponded with their understanding of action research. Elliot, for example, said he thought the team would be adjusting the question as they went along, and suggested that all research did the same. The university researcher disagreed and gave examples of experimental designs in which the question was defined in advanced and guided the research. Ted asked why their project was called action research, and the university researcher and I explained that action research aimed at involving practitioners in research which addressed immediate school problems with the intention of producing knowledge and improving practice. Team members noted that they felt teachers should be doing educational research, although they lacked the support and skills to do so (see next section).

At this point in the project, teachers appeared to be asking questions about action research in order to determine how their experience compared to accepted research patterns or models. This discussion and the need to clarify their research question and design led, the following week, to teachers asking the university researcher and research assistant to bring sample research designs to the next team meeting for consideration. As I have suggested, this indicated the first shift away from teachers' perception of data collection devices such as surveys and school visits as their research. They began instead to envision a more abstract and comprehensive research project. For some of the teachers this larger vision did not completely emerge until the second year. John pointed out that in year one,

> I had no idea what was going on with the research, what we were doing ... There were things that bothered me about it and I'd ask a couple questions and I wasn't getting any answers on it so I just kind of backed off and waited. After going to Detroit (National Staff Development Conference, October, 1982) I had this feeling I understood what we were doing finally. And then I felt a lot more comfortable with it.
>
> (Interview, 6/83)

John said that in Detroit he heard about other projects and got a sense of "what was going to happen" in his own. He began to see research as a process over time, rather than specific data collection tools or techniques.

By the end of the first year, teachers had begun to describe action research as a process which allowed for constant change and adaptation. Brooks expressed this view in an interview:

> It was never clear to me what action research was even though I have research background. I think we've sort of defined action research in our own terms in a sense that we do what's right at the time.
>
> (Interview, 5/82)

This definition of action research prevailed among team members throughout year two, although it was expanded to include several other dimensions. John suggested, for example, that given the nature of action research, conclusions may not emerge:

> I see regular research as sitting down and coming up with almost the end. This is what they want as an end and then they do the research to get there. ... Action research is research that is ongoing, and as the answers to your questions come up or a shift in what you want to research comes up, you just keep right on going researching, whichever direction. ... I honestly feel you may not come to any conclusions about things if you are doing action research.
>
> (Interview 12/82)

Teachers also noted that action research tends to be site-specific.

> Ted: I just think action research is a term applied to people closest to the problem doing it, teachers.
>
> (Interview, 12/82)

> Elliot: It is a process which might not stand close academic scrutiny, but is highly likely to solve site located problems - whatever problems that the group involved decides to address.
>
> (Interview, 12/82)

Team members themselves did not make a specific connection between the flexible, changing quality of action research and its use in solving site-specific problems, but their perceptions match the claims of those who advocate the use of action research rather than linear-experimental research in schools. Action research takes the dynamic conditions of the school or classroom into consideration; experimental designs do not (Mishler, 1975; Pine, 1981).

Team members suggested that because action research projects change over time and address site specific problems, they tend to uncover many other possible researchable issues in the school. As a result, an action research project could serve as the basis for a continuing program of research in a school:

> Elliot: In action research ... inevitably you leave many tangential questions, loose ends. ... It might be nice to build in a way that these loose ends or tangents could be systematically addressed.
>
> (Interview 12/82)

Brooks, too, noted that part of action research is identifying other questions and ending up at a place from which you can continue your investigations (Documentation, 11/17/82).

Team members also defined collaborative action research by comparing it to school processes of curriculum development and committee work. In their comparisons, they suggested that the rigor and validity of research differentiated it from typical school investigations. (This parallels Corey's (1953) comparison of action research and the traditional "common sense" approach used in schools.) During one meeting, for example, John pointed out that collaborative action research went on in schools: Brooks' reading program was collaborative - she and her co-worker were always collaborating, and in science they "get together and decide what will be done, although they don't add research to it." Ted replied, "You always collaborate with colleagues to some extent, but it's the research that separates the boys from the men" (Documentation, 2/9/83). In his final interview, John described what usually goes on in schools as "action inquiry" rather than "action research,"

> Because we were not looking through other books, looking into other schools ... that's what I would call the formalizing process ... We were inquiring within our own building and asking questions and taking the advice of many different people and then coming up with recommendations.
>
> (Interview, 6/83)

Team members' definitions of action research as dynamic, site specific, providing questions for future research, and more rigorous than typical school based inquiry evolved from their experience over the two years of the project. In turn, this definition allowed them to explain the process they had used and the many shifts they had made in research problem, question, and design. The "crooked path" Elliot described the team having taken (Interview, 6/83) was consistent with action research as they defined it.

Team members' tendency to define action research as a process rather than a means to specific ends also allowed them to see this process as an end in itself. As suggested, the goal of the project became teachers' experience of this intrinsically valuable process:

> Brooks: There's something mystical or magical about research. The university researcher asked

> us what do we want to do with the research findings, and I said it doesn't really matter if things don't work out the way we'd like them to work out or they're supposed to work out - I think just that we did it, went through the experience (was important).
> (Presentation at UNH, 5/83)

> John: All the end result is going to get you is possibly a change, and so therefore I don't think the end result is so important. I think it's the process we went through doing it, and to be able to possibly go through this process again is going to be the valuable thing.
> (Interview, 6/83)

Teachers as researchers. Throughout the project, team members claimed that teachers should be doing research to improve both school practice and educational research. In his initial interview, Elliot noted that if all teachers had been involved in the kind of research he had done in his masters degree program they might be more effective. At the end of the two year project, he clarified how schools would benefit from practitioners doing research:

> I just think that active collaboration implies that a bunch of people at some school get together and work out a problem, and in that format ... they might have a more tunneled view of possible solutions than if they considered themselves involved in research. Because if they considered themselves involved in research they would necessarily review literature, look at other settings, and in doing so broaden their scope of alternatives in attacking their own problem ... The inclusion of this research point of view multiplies substantially the possibility of coming up with a quality solution to whatever problem might have been in place.
> (Interview, 6/83)

Elliot also said that research could be improved by having "practitioners, meaning teachers, ... be the ones that do the research rather than people who aren't as actively involved in the classroom situation, such as university people" (Interview 9/81).

Brooks suggested that doing research fulfills certain needs for teachers. It provides information which may permit a teacher (rather than a parent or administrator) to "call the shots" (Documentation, 10/27/82). It also "gives one a direction and ideas and food for thought, and a beyondness" (Interview, 6/83) which can help teachers remain intellectually stimulated and interested in their work.

> Brooks: Action research allows the creativity, I think that teachers generally feel or have a need for.

> ... I think it enhances their creativity, allows it to really be a part of the research, and ... the research becomes alive and really interesting and interesting for other people to hear about.
> (Interview, 12/82)

Thus action research can help teachers, and teacher involvement can enhance the research which results.

Despite their advocacy of practitioner involvement in research, teachers in the first year of the project suggested that a number of obstacles prevented them from becoming researchers. Several teachers seemed to say that their lack of knowledge about research techniques limited their ability to take part in the project. They suggested that the university researcher and research assistant would have to guide the teachers through the research, helping with methods and techniques in the research process (Documentation, 12/2/81).

Several times in year one Jack and Ted said, "No wonder teachers don't do research," and "This proves what college people think about teachers not being able to do research" (Documentation 3/31/82). In describing how he saw the project developing in November, 1981, Elliot said that he did not have the language to talk about it so he was making it up. John responded that teachers do not know that language, which is why the research articles they had been reading made no sense to them. Their comments suggest that these teachers did not see themselves as researchers because they lacked necessary knowledge and skills.

Some team members also noted that teachers lacked time to do research, and that they themselves found time factors limited their work on this project. Partly because of this pressure, several team members noted that it was important to have a non-teacher, like the university researcher, on the team to help the teachers carry out their project. As Elliot pointed out, "A group of teachers doing what we're doing doesn't occur in a natural setting" (Interview, 12/81).

During year two, teachers developed a better understanding of their own research project and began to articulate their own definitions of action research. As a result, they seemed to become more comfortable in the role of researcher. One indication of this (described in more detail in the following section) was teachers' projected use of action research in their classrooms and school. Elliot suggested, for example, that "someone who has been through collaborative action research could use some of the skills they learned to do their own project, which could be action research" (Documentation, 2/22/83).

Another sign of teachers' acceptance of the role of research was their growing use of the language of research and the research of others. In year one, teachers rejected many of the research articles brought to the team by the university researcher and research assistant because they found the reports confusing or meaningless. During year two, teachers requested, supplied, read, and used many articles related to their project. John, who had earlier said teachers lacked the language to read such writing, said that he had become familiar with the language and format of research papers and found he could not only read them but also critique them (Documentation, 6/1/83). Teachers also showed a growing facility with research terminology. In the spring of 1982, the university researcher introduced terms such as "sample," "reliability," and "validity" to the team in discussing data collection procedures. By year two, teachers themselves used these terms with ease in discussing their own work and the work of others.

Teachers' growing facility with research gradually allowed them to see themselves as researchers. When asked what stood out for him about the project, Ted responded:

> What stands out in my mind is the idea that the word research is no longer scary ... I think the biggest thing is that teachers can do research. ... In my mind they shouldn't be afraid of it; it isn't something that only people who are at the university level that are divorced from the school, may not have been teaching for years (can do).
> (Interview, 6/83)

Teachers' experience presenting their work at national conferences contributed to their sense of having gone "beyond" teaching to become a member of the research community. Brooks explained:

> I thought the highlight was going to AERA in Montreal, and being able to take what we were doing and explaining it to another person and really feeling that excitement and getting the feedback, the recognition ... I think that was really important to know how the outside world was reacting to the research that we were doing.
> (Interview, 6/83)

Elliot also noted that presenting at AERA promoted "feelings of accomplishment for team members" (Documentation, 5/25/83).

During year two, team members began to suggest that they had become experts in their particular area of research (teacher morale) and on the process of action research. Before going to the AERA conference, John pointed out to Ted that even if the members of their audience all had PhD's, team members were the experts on what they were presenting and the process they had experienced (Documentation, 2/9/83). Teachers' sense of expertise allowed them to suggest that their research process could serve as a model for future action researchers. Consequently, the section of their final report entitled, "Implications for future study," included several suggestions and recommendations for teachers and administrators who wished to use the action research process.

Team members began the project believing that teachers should do research but lacked the necessary background, time, and motivation. During year two, as they gained familiarity with standard research terminology and technique and worked through the specific tasks of their own project, teachers exhibited a growing sense of themselves as researchers. This appears in their use of other research and the language of research, their feelings of accomplishment and expertise, and their perceptions of how they would use research in the future. The next section addresses this latter aspect of the teachers as researchers in more detail.

The value of action research. By the middle of year two, all but one team member had agreed that the value of their project lay in what they might take from it, personally and professionally, and in how others might use their project as a model in implementing other action research projects. One team member, Ted, agreed that these were important outcomes, but held to his belief that the project would have been more valuable had it affected school practice. I have suggested that the goals of personal and professional growth and providing a research model seemed to arise out of the following patterns in the research process:

1) Teacher inability to create or influence school change,
2) A desire to respect and maintain established teacher and administrator responsibilities and domains,
3) A growing dichotomy between the research project and school practice,
4) Team members' definition of action research as a dynamic process rather than a means to an end, and
5) Team members' growing perception of themselves as researchers with important experiences and information to share with others.

Team members' goals also emerged from their perceptions of what they had gained from the project and how they could foresee using new insights and skills in the future.

All of the teachers noted that the project had contributed in some way to their personal and professional development. Even in the first year of the project, John and Brooks said that they had become better observers and listeners in the school as a result of school context discussions during team meetings (Documentation, 12/2/81). These discussions allowed them to vent anger about school issues and identify and deal with school problems more calmly. Both felt that team meetings made them more comfortable in the school and able to cope with pressures of the school day.

> Brooks: ... the group is really helping me in that all my bitches and gripes and complaints and tension and pressure is sort of discussed on Wednesday, and I get it all out, and I don't have to carry it with me.
>
> (Interview, 12/81)

John explained that the project had given him

> ... a lot of peace of mind. ... Some of the things that would really get us upset in September don't bother us now ... because this is the way we're doing things (in the group) ... just thinking, okay, here's the problem, what are we gonna do about it. Well, we can't do anything about it so let's not worry about it right now. This is something that runs through our minds.
>
> (Interview, 12/81)

During the second year of the project, team members began to identify other ways in which they had benefited from the project. John said that participation had revitalized him:

> I personally feel - I was very set in my ways, determined not to do very much except just teach my classes. This project's kind of revitalized me again so I'm back out around the school talking to people, doing things with people again.
>
> (Presentation at UNH, 5/83)

John also noted that by participating in the project he had gained self confidence in his ability to write and to speak to others about his own ideas. The self confidence developed out of his feelings of expertise, of having something to offer:

> Being thought of as an expert in something, so that when you're meeting (other people) they have the feeling that you know something and you even have the feeling that maybe you know something. That's a good feeling, good experience.
>
> (Interview 6/83)

John and others also observed that attending national conferences validated their own experience and provided intellectual and personal satisfaction. When asked what stood out for him in the project, John said, "Going places and seeing other people and other people's ways of doing things and discovering you're really not that far off the track from everyone else" (Interview, 6/83). Elliot, too, found value in this:

> Elliot: I enjoyed the road trips and found some intellectually interesting things happening on the trips to Syracuse and Montreal ... I guess they weren't even so intellectually exciting as

> personally exciting. Just being able to hear speakers make presentations who I may have quoted in a paper I wrote somewhere along the line, things like that.
>
> (Interview, 6/83)

For Brooks, participation in the research project paralleled and reinforced a period of personal self analysis. When the project began, she was considering leaving teaching. She felt that the project helped provide her with a more positive sense of herself as a teacher:

> Brooks: I think I have really changed. I was really unhappy teaching. I mean, it seemed like there were things that were affecting me and that were out of my control ... I was feeling really emotionally burned out. I felt I need to keep myself alive and vital. The only way I know is to become active and involved in educating yourself. ... Now that I don't feel trapped and now that I feel I have control - I have skills, I have knowledge, I have the power - I can deal with all the problems that are coming up. I just think if I'm in a situation like that again that there will be resources available to us to take a look at the problem.
>
> (Interview, 6/83)

Teachers also observed that as a result of participating in the project they had grown in their ability to work with, recognize, and understand the perspectives, limitations, and skills of others. Brooks said,

> I think that I've grown more accepting of people and their differences, and I see more of an ability to compromise and to work with people that I don't necessarily socialize with or philosophically agree with. ... I'm much more able to realize that there's a greater good for being together as a group.
>
> (Interview, 6/83)

For most team members, this understanding applied not only to other in the group but to the school context and the actors and events which comprised it. Teachers suggested that they now understood the problems and decisions faced by the school administration and could try to find ways to work with administrators on school problems rather than become angry or frustrated as they had in the past. While Brooks felt this as being more in control of her own individual needs and problems, John saw his new understanding and skill as a possible means for wielding more control in the school:

> And I know where the real power is within a school structure so I know how to deal with that. Doing this has given me a way to write which I

> did not have to increase that particular power base ... Talking at places, knowing I can stand up in front of that group and say what I want to say, ... knowing the timing of when to say what I want to say to get across what I think needs to be done, being in this for two years has helped that.
> (Interview, 6/83)

Teachers also valued the action research project and process for its potential value or use to them in their classrooms, school, or future professional growth as well as for the personal growth and satisfaction it provided. John said that his participation had made him a better teacher:

> If anything it's made me better in the classroom because I'm more conscious of what I'm doing there than I was. I was sliding on things; I'm not doing that so much. It's made me refocus some of the things I'm doing because we've had to keep logs. ... I think it's made me better in the classroom over the last year especially ... because I've had this to channel some of my anger and frustration.
> (Presentation at UNH, 5/83)

John also planned to use elements of action research in developing future staff development projects which he could carry out in his classroom. He focused in particular on the process of "documentation," or following students' work in a more systematic way throughout a certain class project, as an aspect of the research process which he intended to use the following year.

Teachers also had ideas about applying action research to other school problems. By the end of the second year of the project, Brooks had initiated discussions with her supervisor about using action research to investigate a number of issues in the school's reading program. John had initiated and carried out a project to address a school-wide problem of student hall passes. Teachers also talked in more general terms about how action research could benefit the school.

> John: I think we each know there are things we can do within the school system in the future that can be helpful. Not just for ourselves, but helping people within the school system. That, to me, is the value of this committee.
> (Interview, 12/82)

Brooks and Ted both suggested that the school could become more research oriented, so that decisions could be based on actual data rather than teacher, administrator, or school board whim. Teachers were vague as to their part in these future uses of action research in their school, although some suggested that they might look for funding or try to find a university person to work with on another project.

Elliot foresaw using the action research model in a project outside of his classroom or school. He said he wanted to get involved in a school-based action research project in which the principal or person in authority was involved. He would then "analyze the group process and be able to write on the actual results of whatever decisions were made" (Interview, 6/83). Elliot's interest lay primarily in investigating how action research worked under different (and what he considered to be more favorable) conditions.

Team members also believed that the project had value in its use for others. One possibility would be for teachers in another school to duplicate this team's research. Comparison of results could lead to a better understanding of factors influencing teacher morale. Another follow-up project on the team's research would be to examine the relationship between teacher morale and student achievement.

Other teachers and administrators could use the team's research process as a model for carrying out action research. In presenting their research to others and in writing their final report, teachers carefully described the steps they had taken in completing their project so that others could repeat them. Toward the end of the second year, teachers talked about putting together a package of written work, slides, and tapes describing their project which could be used by others interested in trying action research. Although they did not pursue this idea, it illustrates the value teachers placed on their process as a model for others.

Teachers' perceptions of what they gained as a result of participation in the project thus included personal satisfaction, development of self confidence, control, and an accompanying sense of power, and growth in skills useful to them as teachers or researchers in the classroom or school. They also perceived a gain for others who could build on their research project or emulate their research process. Despite their lack of influence on the school and their sense of the limited importance of the research product, teachers emerged from their two year experience feeling that it had been valuable both personally and professionally.

Teachers' emphasis on the process of action research and their understanding of the value of the two year experience appear to be mutually reinforcing. Because an immediately useful product was unattainable, teachers focused on the process and the value it could have for them and others. Conversely, the gains teachers actually experienced were more related to the process in which they had engaged than to the specific project which resulted from their work. Thus their feelings of success and personal and professional growth may have helped them see the research process as the most important aspect of action research.

PART II

THE GROUP PROCESS:
THE NEW HAMPSHIRE TEAM

Introduction

When asked what stood out for him as he looked back over the two years of the project, John said:

> Working with the people mostly, and getting to know the people that have been on the team, working with them is the most important factor.
> (Interview, 6/83)

Brooks gave a similar response:

> Working as a group, really working closely with a group that meets consistently on a basis that has a common understanding, common goal. ... I think the way our group worked was ... what the key was that it was a collaborative research group and I think the workings of that was really what was the focal point.
> (Interview, 6/83)

What did it mean to these people to "work as a group?" What constituted the group process they experienced? How did this process relate to their research project and process? This report will focus on these questions.

The team's group process consisted of several interrelated patterns, which, when combined with an understanding of their research process, provide a more complete picture of team members' experience. Each of the patterns in the group process is integrally related to the research process described in the preceding report in this Appendix. In some cases, the direction and demands of the research influenced the ways in which group members interacted. At other times, the group's work on interpersonal issues affected their research project and process. It is often difficult to discern whether research project affected group interaction or vice versa; the two came together to create a unique group experience.

The team went through a series of phases during the two years of its project. In each phase, the team used its meeting time differently and focused on different research tasks and interpersonal issues. In section one of this report I will identify and describe each phase in the group process.

Several other patterns in the group process are directly phase related but require elaboration. Some of the roles individuals played in the group both influenced and were influenced by the research and interpersonal issues dominating each phase. The role taken by the university researcher on the team also paralleled phase concerns. These patterns will be presented in the second and third sections of this report. Other group processes, such as patterns of support and pairing, conflict, and decision making were not phase related. These patterns complete this report.

Phases in the group process

Overview. Bales and Strodtbeck (1951) describe phases of group development as "subperiods within a total continuous period of interaction" (p. 485). Each phase consists of interpersonal and task related issues which the group must address as it proceeds. Certain issues may re-appear in a number of phases, often because they take on different forms or meanings at different times in the group's development (Schutz, 1958).

The above description of group development corresponds to the process experienced by the action research team in this study. The team worked through five phases during its two year project, each phase characterized by interpersonal or group-related and task or research-oriented issues. Several issues, such as use of team time, group boundaries, and group commitment, were raised in initial phases and re-appeared later for team reconsideration.

Although every phase included both task and interpersonal issues, the team experienced a general shift in emphasis from interpersonal to task related concerns and activities over the course of the two years. Schein (1969) and Tuckman (1965) note that many groups exhibit this pattern; interpersonal issues which initially dominate the group process are resolved, allowing the group to concentrate on task concerns. Team members themselves described the group process as a sequence of interpersonal and task related phases:

> John: I think we kind of got together and we spent a period of time getting to know each other a little bit. Then we spent a period of time on discussing our pet peeves about what was wrong, and then we started to get to, well, how can we find out a particular item. Then we went in through the research questions ... and then finally got to the next stage in which we started working on our research project and then finishing the end product.
>
> (Interview, 6/83)

The sections which follow describe the issues addressed by the team in each phase. Dates given suggest shifts in focus which indicate a phase change. Phases tend to overlap; there are no exact dates on which the shifts occured. Figure 1 summarizes the team's phases of group development.

Phase 1: September - December, 1982. The group's first phase lasted from October through December, 1981. During this initial phase, team members often used large portions of each meeting to discuss issues of interest or concern to them in the school and community. They had agreed during the second meeting to spend some time each meeting discussing the "school context." This

Figure 1

Phases of the Group Process

Year 1

	Phase 1	Phase 2	Phase 3
Research task	- problem identification	- data collection clarifying goals	- research design and question
Use of team time	- discussing school context	- discussing school context and data collection tools	- discussing research project
Group issues	- establishing trust - sharing opinions, building a common base - setting boundaries - establishing norms	- feelings of being "on hold" - challenging group leader - unfocused discussions	- feelings of frustration time pressure - concern with group consensus for cohesion - group rather than individual writing for "fairness"

Year 2

	Phase 4	Phase 5
Research task	- data collection - how to analyze data	- data analysis and presentation of results
Use of team time	- discussing research project	- working on data analysis and final report
Group issues	- belief that interpersonal issues resolved in Year 1 - questions of individual commitment to group project - resetting boundaries	- feelings of working hard and accomplishing much - emphasis on group rather than individual work for mutual support - positive group feelings: respect, commitment - attempts to remove boundaries with school

agreement resulted from the university researcher's request that someone on the team document salient events and issues in the school community each week. Team members chose to do this as a group rather than assign the task to one individual. During the team's first eight meetings, school context discussions tended to consume half to three quarters of the team's meeting time. Topics of discussion included the new principal, appointed in November; problems with particular students or types of students; teacher-student-parent relationships; and the roles of house coordinators and department chairpeople.

These discussions served as the basis from which the team generated its research problem. They also provided what Schutz (1958) calls "goblet issues," issues which provide a lens through which individuals can observe, listen to, and get to know other members of the group. Team members had never worked together before and used meetings during this initial phase as a way of learning the opinions, thoughts, and insights of their colleagues.

> Jack: I see the greatest benefit of the first five meetings of getting to know each other, getting to know each other's feelings, a little bit of how each person operates, and just being comfortable with each other. I see that as being the most important thing in the first five meetings.
> (Interview, 12/81)

> Elliot: I guess it's very important for each group member to have a fairly good idea of what all the others are thinking, and we've accomplished that. We just (each) communicated to the others his or her feelings and thoughts on our school.
> (Interview, 12/81)

Sharing their thoughts and feelings allowed the team to develop an initial sense of group solidarity. This issue arose again as the team faced more complex and demanding research tasks in later phases. At this point, group togetherness is experienced as sharing a common set of ideas:

> Ted: I think it made us a team, you know, you feel more comfortable with the people now ... you feel like we've all arrived at the same place.

> Brooks: If you've never really worked together closely I think there's a certain group process ... that must take place in order for a group ... to have some identity as a group.
> (Transcript, 2/10/82)

During phase 1, team members worked through and appeared to resolve issues of trust and confidentiality which might have prevented group cohesion. During interviews and team meetings, several group members raised concerns about the confidentiality of group discussions. Could they trust their colleagues not to repeat or use their openly shared ideas about the school? Brooks described her concern:

> Well, you see, most of us haven't worked that closely with each other and any group has to spend a month or two months really building trust and building who's who and do I trust this person, do I say what's really on my mind, can I be frank with people, will someone come around the corner at me at some other point and hit me with something I've shared that's kind of personal? Or, you know, how far does one go?
>
> (Interview, 12/81)

Although team members explicitly raised this question they never directly or openly answered it. Instead, they increasingly exhibited their trust of one another by sharing opinions, supporting and challenging each others' statements and ideas, and referring to the group as a whole to which they belonged. For example, during a team meeting in November, Elliot said that he had some ideas about a possible project, but felt that if he brought an article in, people would think he was too pushy. Brooks replied, "Teaching is sharing." Later in the same meeting, Brooks asked Elliot to bring in the work he had done on teacher evaluation. He said he'd been "kind of shy until now" but would be happy to bring it to the next meeting (Documentation, 11/18/81). This kind of interchange typifies interaction which contributed to team members' growing feelings that they could trust one another and work together.

Another way in which the team developed feelings of cohesion during this early phase was to establish group boundaries. This issue took other forms later in the project, but at this point it focused on the question of whether or not to include the principal in the group's research process. Some team members suggested that the principal's input would be valuable if he was interested in sharing his ideas, although they agreed that the team alone would make a final decision about what project to do. Other team members argued that the principal should have been included from the first meeting if he was to be involved, because they had just spent the first five meetings "finding out where everyone in the group was coming from." The team chose not to include the principal, in part because the new principal did not begin work until after the Thanksgiving holiday, but primarily because team members perceived of his presence as an infringement on their control of their research project and group process. Their decision ultimately affected the research process, team members' goals, and their project outcomes.

During this initial phase, team members also established some patterns of interaction which became norms, or accepted operating procedures. One such norm was the use of a question to begin a new task or raise a new idea. The university researcher took a non-directive or facilitative role after the first two or three meetings, choosing to let teachers direct the flow of talk and make their own decisions. When she did enter the discussion to direct the task, she tended to use a question rather than a statement:

> "What should we plan to do next week?"
> (Documentation, 11/18/81)
>
> "Do we want to do the school context readout?"
> (Documentation, 12/2/81)

Other team members adopted this method of initiating new ideas or tasks and carried it through the two years of the project. Each team member tended to use this form of directing the discussion most when he or she took on a leadership role in the group over a several meeting period (see Individual Roles).

Another team norm established during these first few months was the use of a weekly agenda. The university researcher introduced this pattern, too, asking team members each week what they wanted to do the following week. At each meeting she would list those items on the agenda (a large pad) and ask the team for others. When the university researcher was not at a meeting, other team members made the agenda, an action which served as an indication of the official start of the meeting. Both the university researcher and other team members used the agenda during team meetings as a way of refocusing a discussion or moving the team on to another item or task.

Another norm established during phase one was that explicitly set group rules governing team members' behavior tended to be ignored. Over the course of these first three months, the group explicitly established three rules:

1) If a team member could not attend a meeting, he or she would inform Jack, who would call the university researcher.

2) Anyone who missed a meeting was responsible for finding out what they had missed.

3) School context discussions would be limited to approximately one half hour so that they would not prevent the team from focusing on research tasks and issues.

After the meeting at which the team agreed to each of these rules, the rule was infrequently adhered to and rarely, if ever, mentioned again. Team members usually (but not always) told someone on the team if they could not attend a meeting, but they did not usually inform Jack, and he never called the university researcher. When team members missed a meeting, they often came to the next without having talked to another team member about what had transpired. And although the amount of meeting time devoted to school context discussions decreased over the two years of the project, the shift was not due to enforcement of the half hour limitation but resulted from the team's need to use meeting time for research-related issues. Team members apparently established these rules to help them adapt to and become a part of the group during its initial phase. Because they developed feelings of group cohesion and an ability to work together in more subtle ways, the rules were not needed. After phase 1, the team did not explicitly set rules to govern team members' actions or interactions.

A final norm was established at the end of this phase as the team moved into its first research tasks. Team members had decided to survey the staff on their opinions about scheduling issues and had talked briefly about what would be included in the survey. Elliot offered to bring a draft of the survey to the next meeting for the team to work on. In an interview, he explained that he offered to write the draft "because I thought that we had, during that discussion, ... brainstormed all the items of information we'd like to cover in the interview, and I didn't feel like going through it all over again" (Interview, 12/81). When he brought the draft in, Elliot told the team he had written it so they would have a draft to work with, but he had "no personal stake in it so you can comment freely" (Documentation, 1/6/81). Team members initially accepted the draft as written and then gradually began questioning and revising. Elliot's actions here set a precedent for team members volunteering to begin a task on their own and bring it back to the team for revision. As others began to bring work in for group appraisal, they echoed Elliot's disavowal of personal feelings involved in the task. Other team members first accepted their colleague's work, providing a cushion of support before going on to analyse and rework the drafted piece. When the team was not involved in group data analysis and writing, this pattern of task assumption and team reaction dominated their work on the research project.

In retrospect, team members saw phase one as a necessary time of group building. They also described it as confusing and frustrating, a time in which the research task was undefined and the research project non-existent.

> John: I honestly wonder in my own mind what I'm doing most of the time ... I think most of (the other team members) are in the same boat I am ... We keep advancing but I'm not sure where we're going to.
> (Interview, 12/81)

> Jack: I know we have to brainstorm to start with and spend a considerable amount of time - I guess if we just sat and talked for six, seven, eight weeks the purpose it serves is getting to know and trust each other as fellow workers ... I don't think we really, any one of us, really knows where we're going or have

> identified the problem yet to the point of carrying it further.
>
> (Interview, 12/81)

Despite their feelings that they spent more time on interpersonal than research issues, team members also believed that phase one provided a necessary foundation for proceeding on the research task. First, it gave team members a feeling of ownership and control:

> Elliot: I think the basic element in this collaborative action research is that it should accomplish whatever the participants want it to accomplish. Now it took us a while before people in the group had a sense for that but now we do, so it's like now we're free to move on.
>
> (Interview, 12/81)

Second, it began to provide a sense of what, as a group, the team might be able to do:

> John: I think we have got to come to some conclusions about a project or a theme to research ... and begin to focus in on the tools that we're gonna take to either try to solve these problems or come up with ideas about solving the problems so that we can hand them over to someone who can do something about it.
>
> (Interview, 12/81)

Team members suggested that phase one, as they experienced it, benefited both the group process and the research project:

> Elliot: I guess ... the route we used to arrive at this problem identification was the only one, and sometimes a more direct route loses a lot.
>
> (Interview, 12/81)

> John: I think we're going slow but I think we're going steady. Maybe if we went too fast the whole thing would bog down; maybe this is the way we should go about it - it seems to be working now.
>
> (Interview, 12/81)

> Brooks: I think that every group ... goes through that sort of finding a niche, building who's who in the group and what function and whether it's stated or implied, and I think that's gone on. And I think now the group sort of feels that they come in, and they have a task to do, and we may not know where we're ending up but now we know we're in the process.
>
> (Interview, 12/81)

Phase 2: January - March, 1982. The two or three meetings during this phase which focused on the preparation and administration of the team's first Staff Opinion Survey were more research task oriented than the team's previous meetings. One team member drafted the survey, and the team spent one meeting editing the draft. Another team member collated the survey results, and the team used two meetings to discuss them. In February and March, however, the group returned to more school context related discussions and reduced the time spent on research task oriented talk. This shift seemed to result from team members' uncertainty about what to do next with the research project. As Ted wrote in his log, "Now that the survey is done, what comes next? I feel we are beginning to wander, or maybe it's the mid-winter slump" (Log, 2/11/82).

Certain patterns of interaction dominated this phase. Although team members continued to list agenda items which included specific research oriented topics (e.g., research questions, site visit interview questions, ERIC search on scheduling), they tended to avoid discussion of their research project. When asked which agenda items they wanted to address first, they would say, "Ones that don't take too much time ... the light ones" (Documentation, 3/31/82), such as whether or not to meet on a certain day. School context discussions prevailed, and the university researcher's attempts to tie these back to the research were acknowledged but infrequently built upon by other team members. Jack and Elliot both suggested that the team's behavior indicated an unwillingness to move ahead with their research:

> Elliot said, "We're in a holding pattern - we know what we want to do; we have to decide what to ask and how. ... We're at a scary point now. We know what we want to do, now we have to do it."
> (Documentation, 3/3/82)

> Jack said, "It looked like the further we go the less anxious we are to take on the real issues."
> (Documentation, 3/31/82)

The team's first major conflict arose during this phase, ostensibly about an extra meeting date. Two team members, Jack and Elliot, came to a meeting in late January, 1982, suggesting that the team meet the following Friday, during a school in-service day, rather than at its usual Wednesday time. The team could invite other staff members to attend the Friday in-service meeting to discuss any questions raised by the collated survey results which had been distributed to the staff that week. Ted supported the idea; John felt the team needed the Wednesday meeting time to work, and Brooks remained neutral. The university researcher agreed that the Friday meeting sounded good, although she would be unable to attend. She also said she was concerned about the amount of work the team had to do, and suggested that they meet both days. Jack and Elliot said that two meetings were impossible, given other time demands. After some discussion, Jack said, "Well, I can meet Wednesday, you can, so we can all meet Wednesday" (Documentation, 1/27/82).

The university researcher refused to make a decision for the team around this issue, but she would not acquiesce to some team members' desire to have a single meeting. This was the first time the researcher had asserted the power she had as group convenor and university professor (see Researcher Role). The team experienced this incident as a conflict, a power struggle between the university researcher and team members, especially Jack. The conflict was resolved when Jack decided for the team that they would meet next Wednesday, not Friday. Despite the immediate resolution, however, the rest of phase two is marked by some tensions between Jack and the university researcher, noted primarily in his tongue-in-cheek deference or challenge to her ideas and suggestions. This pattern of behavior parallels what Tuckman (1965) refers to as "storming," the second stage of group development. Once the group has formed and established some ties, they tend to challenge the group leader in order to define and limit that person's power. Although this pattern occured primarily with one person on the team and diminished as the team became more research oriented in phase three, it may have represented a testing of the university researcher's role in the group.

Phase two was therefore characterized by hesitancy, a tendency toward non-research related and free-flowing discussion, and some questioning of the university researcher's position on the team. The shift to phase three occurred at the beginning of April, when team members asked the university researcher and research assistant to bring some models of possible research designs to a meeting for the team to examine.

Phase 3: April - May, 1982. During team meetings in April and May, the team shifted away from issues of general school context or individual concern and toward a primary focus on the research project. The team spent most of its meeting time during this phase discussing concerns directly related to the research project: research question, design, and methodology. Team members indicated that this shift may have come from a number of sources: team member frustration with a lack of task or focus; a readiness to take on more abstract research issues; and approaching deadlines - a presentation to the Michigan team in late May and a research proposal due at NIE in June.

> Brooks: I think everyone felt ... kind of muddled and unsure ... and then I think what happened was that I myself felt that after we had discussed scheduling and we started doing the ERIC searches and reading literature then as things became more narrow I felt okay, let's get it under way and let's stop pussy footing around, let's nail something down.
> (Interview, 5/82)

> John: Well basically, for about a month now I have a feeling that our deadlines are running out; we have things to do and we are not getting to do it, and we can't keep sitting around and talking about what we'd like to do.
>
> (Interview, 5/82)

During phase three team members focused almost entirely on issues of research question and design; there was no need for the university researcher to try to bring the discussion back to task related concerns as she had in phase two. Interaction during meetings in phase two seemed desultory, undirected, hesitant; often during school context discussions team members stated opinions and used personal anecdotes as illustrations without commenting or building on previous ideas or statements. In phase three, however, interaction was more directed and intense. Team members worked with materials provided by the university researcher and research assistant, asked questions about those materials, and discussed how to implement a variety of possible research designs. They left the meetings with the feeling that they had worked hard, a feeling lacking in phase two.

Team members also demonstrated a renewed concern for group cohesion at this time. Elliot and Jack were absent from the meeting at which other team members decided to use the MBI to measure the effect of organizational changes in the school on teacher morale. At the next meeting, Brooks said she had not felt comfortable making a decision which affected other team members, and she asked Jack and Elliot for their views. They accepted what she and John had decided despite their minimal interest in investigating teacher morale. Brooks commented later that she had raised the issue because she felt that all team members should feel ownership in the project.

Concentrating on the research project and deciding on future directions seemed to draw the group closer together. Teachers reflected on phase three as a time during which the team united around a common goal, a process which allowed them to carry out their research project in year two.

> Brooks: I think that consensus at some point takes over. ... It didn't really happen, I felt, until the last part of the first year ... when we really felt a need to come up with our question ... and we had our guidelines and timeline.
>
> (Interview, 6/83)

> Ted: I think that we were all dispersed at the beginning; everybody was looking for something to do. ... People said why don't we do - scheduling was the big problem and we all agreed to that. Then we broke up again, nobody could understand what scheduling was - it was too big. And we separated for a long time. ... (Teacher morale) presented an

> opportunity to finally ... start working ... I think people came together eventually - the chips were down and it was getting late.
>
> (Interview, 6/83)

The group demonstrated its feelings of joint ownership and shared responsibility in deciding that all members should participate in writing the research proposal required by NIE. This decision grew in part out of the norm of having the group edit drafts prepared by individuals. It also reflected team members' perception that it was "unfair to have one person do it" (Documentation, 5/5/82) and that all should share in the responsibility. As a result, each team member wrote one piece of the proposal. In the final phase of the project, team members carried the idea of group cohesion through writing further, insisting that the final report be written during team time by all team members.

Phase 4: September - December, 1982. In retrospect, team members described a difference between year one and year two in their use of team meeting time and in salient group processes. Brooks noted, for example, that during the first year team members did little research related work outside of team time. During year two, members did more on their own and came to meetings prepared to work. She pointed out that because the group now shared "a whole body of common knowledge" they did not have to continually discuss either school context or research related issues. "You can just kind of like off the top of your head say something and a team member will connect with it, whereas before it didn't always work that way" (Interview, 12/82). She suggested that in year two "the group itself spent less time processing. ... I think it was sort of maybe spoken or unspoken that we had put our cards on the table" (Interview, 6/83). Elliot described the difference between years one and two in a similar way:

> This entire year (year two) has been consumed in taking data, analyzing it, and getting it ready for presentation ... so the things we have done have been very practical in nature. So talking about this year's contributions by any of us actually ... is to talk about rather nuts and bolts kind of thing. ... The phase of the project where the interaction was so important during the first year was over.
>
> (Interview, 6/83)

Despite continuities throughout year two, it can be separated into two distinct phases. During phase four team members continued to use team meetings to discuss their research design, data collection procedures, and plans for data analysis. As I have suggested in the previous report on the research process, they talked about how to analyse their data; actual data analysis took place in phase five. Also during phase four team members faced questions of commitment and reworked issues of group boundaries.

Between September and December, 1982, both Elliot and Ted questioned the value of the team's research and their commitment to the project. Some of their alienation arose because, despite Brooks' attempts during phase three to include them in the decision to investigate teacher morale, they questioned the topic's research validity and its relevence in the school. Elliot's concern took the form of negative comments or questions about the use of particular data collection tools and the research project as a whole.

> I could do a job on this set of interview questions ... I don't like it very much, but I'll keep quiet.
> (Documentation, 11/10/82)

> How useful is information on teaching teams and burnout? ... I wonder what will come out of it - there was a certain percentage of change, thanks for the money?
> (Documentation, 10/27/82)

Other team members reacted to Bob's questioning during this phase by hearing him out and explaining what they saw as the goals of the data collection tools and the overall project. Brooks and the university researcher also provided Elliot with extra support, welcoming him when he arrived late to meetings, encouraging him to talk about his experience teaching at the high school, and raising the possibility of his carrying out an adjunct project on student achievement. By the middle of November, Elliot seemed to have rejoined the group and committed himself to the project. He began to develop computer programs for data analysis and talked about the team doing a good job on what they had chosen to do. By December, Elliot was encouraging the group to think about the form of its final report.

During phase four, Ted distanced himself from the group. Although he occasionally questioned the value of the project, his disenchantment seemed more evident in his lack of participation and task assumption during team meetings. Ted had also been less involved in the project than other team members in year one, but because of the team's greater task orientation in year two, his unwillingness to take on responsibility in phase four led to conflicts with other team members.

Frustration with Ted surfaced several times during the fall of 1982, often in the form of sharp retorts for his apparent misunderstanding of what was happening in the project. In late October, a confrontation between Brooks and Ted at a team meeting addressed the apparently growing tension. Before this meeting, Brooks, Ted, and Elliot had arranged a meeting to work on scoring teacher surveys. As a result of miscommunication, the meeting never took place. Brooks later asked Ted to help her with the surveys. He said he could not right then and indicated that he did not know what to do with the surveys. At the team meeting following these interactions, Brooks began explaining her frustration while Ted was out of the room. When he returned, she chose to continue, and they argued over what had occurred in the two earlier exchanges. Brooks noted that she was frustrated because the team had a lot to do; time was running out, and Ted was not helping and did not even seem to know what was going on. Ted told Brooks that he refused to "buy into this guilt trip," and blamed the problem on poor communication. Brooks ended the interaction by agreeing that communication had been a problem. She then moved the team on to a concrete task (Documentation, 10/27/82).

For both Ted and Brooks, the open conflict seemed to ease previous tensions and reunite the group. Brooks explained,

> It sort of cleared the air for me. I mean, I don't have any bad feelings or resentment. ... I think that, ... being critical of him stopped at that point. ... Now I can see him in a different perspective. Like sometimes his questions seem off the wall, but they sort of end up clarifying what we are doing.
> (Interview, 12/82)

During the team meetings which followed, Brooks' interaction with Ted reflected the feelings expressed in this statement. She responded to his questions with more tolerance, made attempts to include his interests, and even had a few playful exchanges with him. Although Ted himself did not note any specific change in his attitude at this point, his behavior in the group changed as well. He became more conscientious about carrying out shared tasks such as interviewing staff members and reading and reporting on ERIC articles. He also took a somewhat more active role during team meetings, suggesting procedures for analysing data, and he tended to preface his questions with a justification for asking; "I know I went to the Social Studies meeting and came in late, but I'm not sure - I have my list so why do I have more?" (Documentation, 12/8/82). Althought the conflict over Ted's differences with the group re-emerged in a more subdued way in phase five, it arose and was addressed in phase four as the team began to focus on task related issues during year two.

The team handled its two problems of alienation differently in this phase. Because Elliot had carried out research tasks in earlier stages and continued to do so even as he questioned the project, team members supported him during his questioning period and encouraged him to rejoin the group. Elliot completely recommitted himself to the team by the end of the phase. Ted, however, had carried out few concrete research tasks for the team in year one, and his withdrawal in year two aroused frustration and anger rather than support. Although he seemed to rejoin the group after his confrontation with Brooks, his continued lower level of involvement and his dissatisfaction with the project prevented his total commitment and other team members' ability to support him (see Individual roles). Thus individual commitment to the team, reflected in task assumption and involvment, influenced how team members reacted to individual's concerns about the project.

The team also re-addressed two boundary issues in its fourth phase, both of which illustrate the interrelation of research and group concerns. In September, 1982, Jack left the team to assume a principalship in Maine. Team discussions of whether or not to replace Jack focused on two issues: how much work the team had to do and whether or not it could be done by four people, and what the group would have to do to adapt to and orient a new member. The group decided not to replace Jack, primarily for group interaction reasons; they did not want to take the time to rebuild the group with a new member. When they reflected on Jack's departure they tended to see its effects in terms of both research demands and group interaction.

> John: I think probably, if anything, that it has been more of a feeling of we have got stuff to do, there's not as many of us now, so we are going to have to work to get done, and that seems to be evident a bit.
> (Interview, 12/82)
>
> Elliot: With one less member it allows more time for the others to talk and more time for the other group (members) to listen to that fourth ... You all feel more free to speak in detail sometimes.
> (Interview, 12/82)

Jack's departure forced the team to re-examine its boundaries; it also seemed to allow other team members to exert greater leadership, filling the void he may have left (see Individual Roles).

Another boundary issue resolved during phase four concerned the use of the research tools and expertise of a University of New Hampshire professor who had done prior research on teacher morale and burnout. Brooks had been in touch with this professor in spring, 1982, and again in the fall and had found his articles and advice useful to the team. She and the university researcher suggested that Elliot, who had assumed responsibility for creating computer programs for data analysis, contact this professor and perhaps borrow his programs. Elliot resisted these suggestions, explaining that this professor's data and programs would not be useful or that he "didn't trust it" (Documentation, 11/3/82; 12/1/82). He later explained that he did not want to spend "a lot of time explaining to some outsider what we wanted done" or do the team's project in order to add to someone else's research (Interview, 12/82). By working out his own computer programs Elliot again refused an "outsider" entrance into the group and preserved group boundaries. In phase five, team members begin to reverse their insular tendency as they reached out to explain their project to others.

Phase four was therefore characterized by an increased emphasis on the research project, which led two team members to question their commitment to the group. Although both stayed on, one became more involved than the other in carrying out research tasks, and their acceptance by the group and their own feelings about the project reflected their different experiences. The group also addressed two group boundary issues related to their research project. In both cases, the group chose to maintain closed boundaries and preserve the unity of the group, actions which ultimately gave them greater feelings of project ownership.

Parallels again exist between the group's experience and Tuckman's (1965) description of group development. Tuckman calls the third stage of group interaction "norming," a time in which the group overcomes resistance and establishes cohesiveness, standards of behavior, and new roles. In the fourth and final stage, "performing," the interpersonal structure becomes a tool of the task activities as the group channels its energy into task performance. Phases three and four of this research team allowed the group to re-establish group solidarity and clarify processes which, in phase five, could be applied to an intense period of work on the research task.

Phase 5: January - May, 1983. In December, 1982, and January, 1983, a shift occured in the team's use of meeting time. During phase four they had used meetings to talk about the research project. In phase five, team members used group time to work on specific research tasks. This pattern had appeared earlier when the team had particular tasks to accomplish, such as designing the Staff Opinion Survey, composing a letter of inquiry for school visits, and working on possible interview schedules. The meetings at which the team actually worked on these instruments were exceptions, however, to the more prevalent pattern of discussing either school context issues or how to proceed on the research project. By January, 1983, the team had collected all of its data, and began to spend most of its meeting time working on research tasks. These tasks included collating data, analysing computer printouts, making notes for the final report, and writing the final report. Although the team spent some meeting time between January and May, 1983, discussing how to complete the project, this now became the exception to their use of meetings to work on research tasks.

During interviews in December, 1982, team members foresaw phase five as one of hard work. Unlike their hesitancy in phase two to face the hard questions about their research project which they belived lay ahead, teachers about to enter phase five sounded ready to take on the new task demands.

> Brooks: In terms of the total research we are just on the verge of beginning to be able to say something about it; where we have been in writing the research, where it's headed, the trends. ... We are just like almost on the edge of diving into the information that we are gathering, and I see a lot of work sessions

> coming up that are going to be pretty intense.
> (Interview, 12/82)

> Elliot: (We're) beginning to move into a phase where tasks become more and more clearly defined, so that really, earlier phases have pretty much been brainstorming and people are called on to do what you might call creative thinking. ... (Right now we're in a phase of) organizing and preparing for the nuts and bolts crunching out of the final product.
> (Interview, 12/82)

Team meetings during phase five had the same feeling of intensity as those in phase three. Meetings tended to last an hour longer than at any other time during the project, and all team members contributed to data analysis and report writing. Team members frequently commented on how much there was to do, but also noted how much they had accomplished. Team members initiated and held several all day meetings to work on the project, meeting twice during school vacation and three times on weekends. No one questioned the extra time; group involvement and commitment reached its highest point during this time.

Team members' intense, shared work on the project and their group presentations at AERA and the University of New Hampshire led to strong feelings of group cohesion during this phase. In team meetings the group resisted any suggestions to divide up the work of data analysis or report writing. In phase three, the rational for group writing had been fairness. During phase five, team members wanted to write together because they felt the group provided necessary intellectual and emotional support during the difficult processes of data analysis and writing.

> Elliot said he thought it was less painful to write as a group, even if people were writing on their own, to have people around. Brooks agreed, saying she got "muddled" on her own.
> (Documentation, 3/2/83)

Group data analysis and writing led to a unique pattern of interaction for the team during this phase. Team members composed aloud, building and rebuilding sentences as everyone added to and amended the words and statements of others. The following conversation occured as the team worked on one section of their final report.

> Research assistant: We could say we started with -
>
> Elliot: 'Our early discussions led us to believe that scheduling was an overarching problem or issue -'
>
> John: '- which affected everyone - '

> Research assistant: ' - teachers and students -'
>
> Ted: ' - or had far reaching effects.'
>
> (Documentation, 3/13/83)

This kind of interaction arose from the nature of the task and promoted feelings of group solidarity; team members encouraged one another, applauded good or appropriate words and phrases, and laughed together at awkward or over-used terms.

The team's close group work during this phase led them to emphasize team members' commitment and their mutual sense of respect when they described the team to others.

> Brooks: We built a close, positive group feeling: beyond the feeling of being a part of the group there was a sense of commitment, that people would come in and be honest with one another.
>
> (Presentation at UNH, 4/20/83)

> Elliot: It developed from a group of people more or less shooting the breeze - in the end participants were, the teachers were doing impressive stuff. ... I think the teachers contributed more to each other and to themselves than might be expected on a lot of projects.
>
> (Interview 6/83)

This strong positive sense of group performance may have influenced those teachers who noted in their final interviews that the group process stood out as the best part of the project.

As noted in the school context section of the report on the team's research process, team members re-examined their boundaries during this final phase. Not only did they present their research at AERA and UNH, they also had to decide who in their own school and system would be invited to share in what had become a fairly insular group process and project. The decision to invite the principal to a team meeting reversed their previous decisions to depend only on their internal resources and reflected an attempt to integrate the research project back into ongoing school practice. For reasons explained in chapter 3, including their gradual withdrawal from the school context over the two years of the project, the team did not succeed in expanding their boundaries to include the principal and the school. The team therefore emerged from phase five with postive feelings about the group process but mixed or negative feelings about the immediate success of the research project.

Summary. The team experienced five phases in their group process, each phase characterized by a different use of team time, different research tasks, and a number of key issues in group interaction. They exhibited a general movement from concentrating on interpersonal issues in phases one and two to focusing on research tasks in phases three, four, and five. In each phase, the team re-addressed issues of group cohesion and commitment, gradually building positive feelings of solidarity based at first on trust and shared ideas, then on a common goal, and finally on shared tasks which demanded more intense interaction. The team also dealt with group boundary concerns during several different phases, consistently limiting group acceptance and use of "outsiders" until the end, when they attempted to re-integrate the project back into the school context.

The patterns of interaction described in these five phases illustrate the interrelation of the research project and group process. Shifts in the demands of the research project over the two years affected how the team used its time and interpersonal issues which arose. Conversely, interpersonal issues such as establishing trust, challenging leadership, accepting a common goal, and addressing questions of commitment seemed to determine when the group was prepared to accept certain research demands and successfully execute research tasks.

Individual roles/ Leadership

Overview. The literature of group dyanmics tends to describe role formation as a process occurring once during the group's life and role function as a stable characteristic of a group member (Bales, 1951; Thibaut and Kelly, 1959). In this action research group, however, individual's roles changed over the two years of the project, reflecting shifting research demands and patterns of group interaction and teachers' changing perceptions of themselves as researchers. During the first phase of the project, team members all initiated, clarified, and added to the statements of others, and summarized when they felt they had something to contribute. The school context and problem identification discussions in this phase allowed each team member to support and challenge one another, move the discussion along, or provide new information.

> Elliot: I think that team members tried to share information, especially where they had individual expertise. ... Each individual seemed to feel responsible to offer his or her input, especially where it might be unique. ... Whenever an aspect ... came up that one or another group member was especially familiar with then that group member would somewhat take charge of that phase of the discussion.
> (Interview, 12/81)

Because the task remained undefined in phase one, so did specific roles. As a result, team members contributed fairly equally, fulfilling similar functions in the group while providing different perspectives. "Everyone seems to fill voids created by the other ... kind of like we complete the jigsaw puzzle" (Elliot, Interview, 12/81).

As the team moved through its other four phases, individuals began to assume more differentiated roles based primarily on the unique skills each brought to the research task. Group leadership emerged as a role carried out by whoever had the knowledge or skills most useful to the team at any given time during the two years of the project. Team members noted that change in roles and leadership depended on task demands and individual familiarity and ease with those demands.

> Jack: I think pretty near everyone within the group were leaders at one time or another depending on the particular chore or activity that they felt comfortable with.
>
> (Interview, 12/82)

> Ted: I think people became the leader because they just picked up the ball and ran with it.
>
> (Interview, 6/83)

> John: I think that changes occured with each of us as we went along, and it was probably due to our growth in the project - whether we felt more comfortable then we felt we could contribute more.
>
> (Interview, 6/83)

> Brooks: I know people have changed, but also it depends on the task that we're doing, really, like who feels comfortable with it and who has the time and who gets involved with a certain aspect of the research.
>
> (Interview, 12/82)

Individual's roles and assumption of leadership in the group process therefore depended on a combination of factors including individual skill and knowledge and the demands of the research. Chapter 8 of this Final Report suggests that individual experience in the project may also depend on the person's life age phase or developmental stage. As a result, individual roles, including group leadership, were phase related. In the sections below I present a description of the roles each team member assumed in relation to the phases of the project. Figures 2-7 summarize individual roles over the two years of the project.

Jack

Jack was in the unique position on the team of being both a teacher and an administrator (house coordinator) in the school. As a result, he faced the distrust of some team members, and felt he had to let his colleagues know that he shared their concerns and merited their trust.

> I'm trying to participate as a teacher, and have them see me as a teacher, and I know these people well enough so if I sit here and talk about the office ... they understand that I'm not going back down there and

Figure 2

Individual Roles - Leadership Patterns

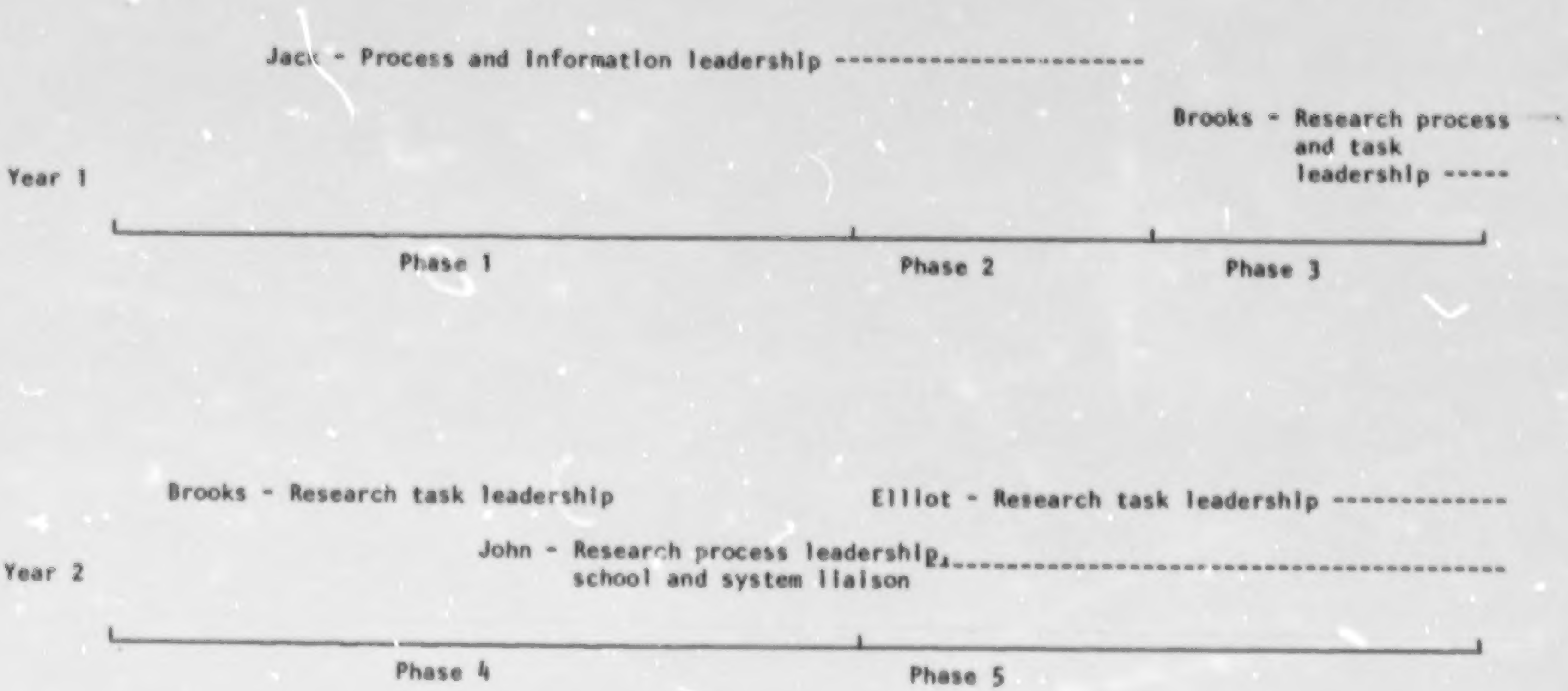

Jack - Process and information leadership
Brooks - Research process and task leadership
Year 1
Phase 1
Phase 2
Phase 3
Brooks - Research task leadership
Elliot - Research task leadership
John - Research process leadership, school and system liaison
Year 2
Phase 4
Phase 5

Figure 3

Individual Roles - Jack

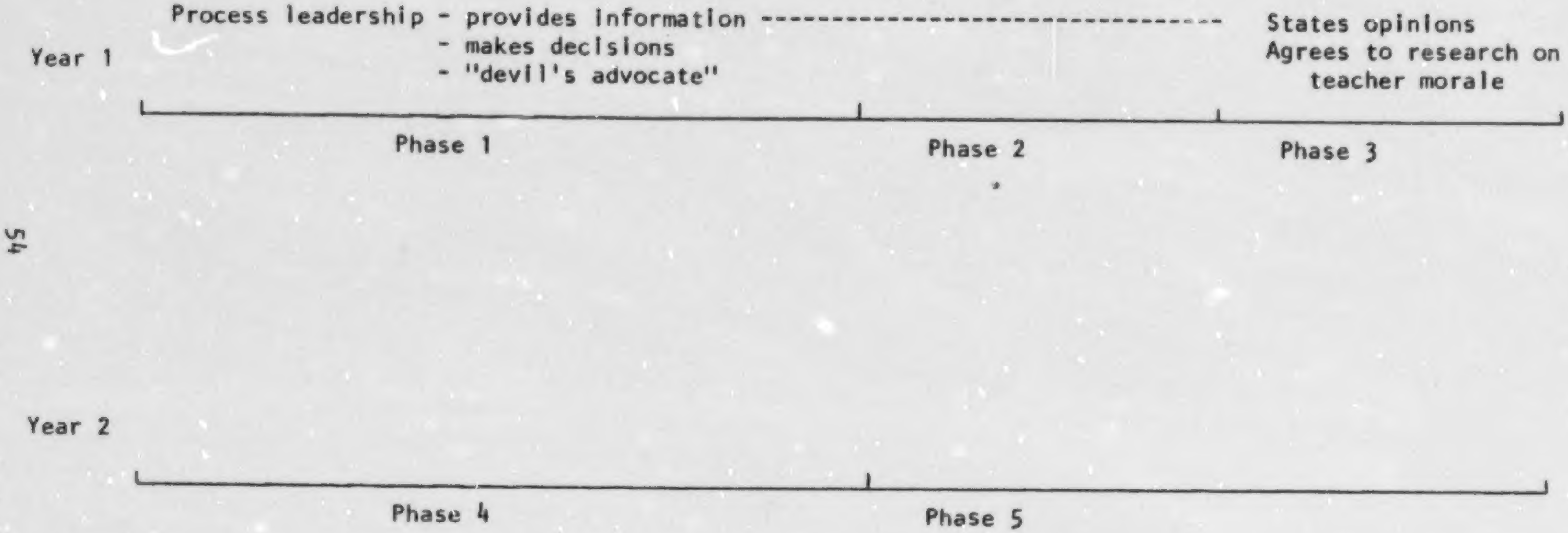

Process leadership - provides information ------------------------------
- makes decisions
- "devil's advocate"
States opinions
Agrees to research on teacher morale
Year 1
Phase 1
Phase 2
Phase 3
Year 2
Phase 4
Phase 5

Figure 7

Individual Roles - Ted

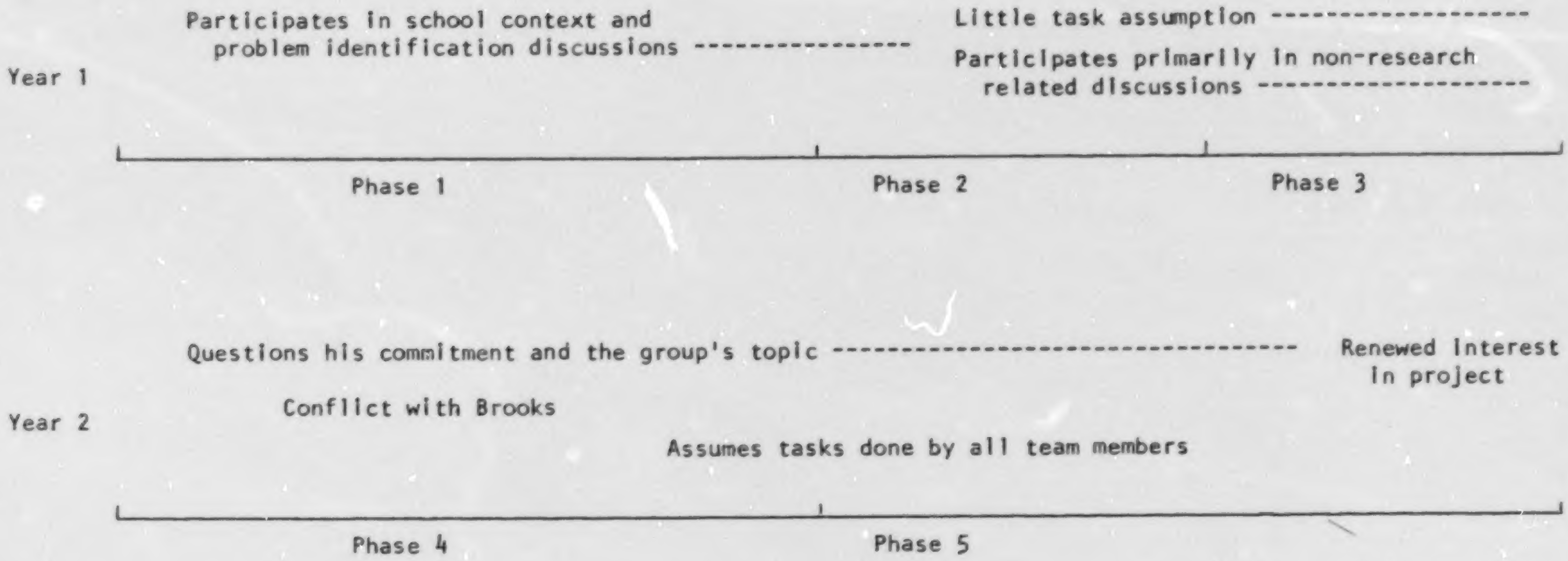

Participates in school context and problem identification discussions ----------------
Little task assumption ------------------
Participates primarily in non-research related discussions -------------------
Year 1
Phase 1
Phase 2
Phase 3
Questions his commitment and the group's topic ----------------------------------
Renewed interest in project
Conflict with Brooks
Year 2
Assumes tasks done by all team members
Phase 4
Phase 5

Figure 5

Individual Roles - John

Discussant - provides opinions
and school history ---------------------

Writes school
history

Supports Brooks' research
leadership
Learns research language,
gains understanding of
designs

Year 1

Phase 1

Phase 2

Phase 3

Attends NSDC

Process leadership - provides overall picture of project
- establishes task procedures ---------------------------------
- serves as school and system liaison

Year 2

Phase 4

Phase 5

Figure 4

Individual Roles - Brooks

Year 1

Reference to research articles

Use of team meetings to air personal/ professional frustrations ----------------------------------

Questions confidentiality

Research task leadership
- research design
- administration of MBI School Survey

Phase 1 | Phase 2 | Phase 3

Year 2

Research task leadership ---------------

Use of team to work through personal/ professional issues ----------------------------

Works on shared tasks, analyzing data and writing report

Phase 4 | Phase 5

Figure 6

Individual Roles - Elliot

Questions confidentiality

Provides group with overall sense of its process -------------------------

Acquiesces to teacher morale project

Year 1

States opinions about research project, topic

Phase 1 | Phase 2 | Phase 3

Questions value of research project ------

Recommits himself to project

Research task leadership - data analysis
- writing report

Year 2

Designs computer programs for data analysis

Phase 4 | Phase 5

> say to the office world ... 'They say that you did this or that.'
>
> (Interview, 12/81)

Jack's position and his many years of experience at the school allowed him to take on several leadership functions on the team during the first two phases of the project. He may have assumed these tasks because he was comfortable in a leadership position with a group of teachers. Other team members may have accorded leadership to him as a result of his status and access to information outside the group. Ted, for example, perceived of Jack as the leader at the beginning of the project.

> Jack's personality, I think - he's outgoing, he's been here a long time, he was house coordinator, assistant principal. I mean, I guess he's down to earth, people just accepted it. He was the highest ranking member there I guess. ... It just evolved (from his) being house coordinator. I don't know if he would have been leader through the thing, but I think at the beginning this was his role.
>
> (Interview, 6/83)

Others, Brooks, for example, may have appeared to accord Jack a leadership position because she did not completely trust him. Acceptance of Jack's leadership during the first two phases of the project allowed Brooks and others to see how Jack might use the team as an administrator. They could then decide how they wanted to act and interact on the team.

As leader, Jack often provided the team with information available to him as a school administrator. During discussions of the school context and possible research problems, questions, and designs, Jack offered his "insider's" knowledge about the new principal, a forthcoming addition of department chairpersons and advanced English and math classes, changes in the guidance department, and scheduling changes planned for September, 1982. Because he had access to otherwise unavailable information, other team members often accepted his opinion or point of view without challenge. When asked if he felt his position in the school allowed him to bring a different perspective to the group, Jack responded,

> Yeah, I see me as adding a different perspective ... I feel that I can possibly relate some of these other things to the group as to how it might affect the total running of the school ... seen from the office aspect.
>
> (Interview, 12/81)

In phase two, Jack took on the task of collating the results of the Staff Opinion Survey and presenting them to the team. Carrying out this task seemed to increase Jack's perception of himself as the team's task leader. Throughout phase two he questioned the team about what they would do next and where they were headed, often repeating the phrase, "What is the question?" He himself provided few answers to his questions, believing that by being a "devil's advocate" (Interview, 12/82) he could move the team along. He may also have served as the team's leader in challenging or testing the power of the university researcher, described as an aspect of phase two. Although not all team members agreed with Jack's position in this interaction, he may have represented, or felt he represented, their feelings about her role on the team.

As the team began to focus on its research question and design in phase three, Jack exerted less control over the team. He himself had noted that he knew little about research, and as the team became more research oriented he participated somewhat less and was no longer seen as an authority by others. Because he left the team in September, 1982, Jack's role on the team cannot be followed beyond phase three. In the first year, however, his role appeared to stem from his status and access to information outside the team. When these became less useful to the team, leadership shifted from Jack to those with other skills and insights required by the team's growing emphasis on the research task.

Brooks

During the first two phases of the project, Brooks participated in two ways. In discussions of school context concerns, she tended to contribute general ideas accompanied by personal anecdotes from her recent experience. Brooks' general comments often seemed to provide her with a vehicle for sharing the more personal experience, a process which allowed her to work through the particular stresses and concerns she was feeling. As mentioned, Brooks found that participation on the team helped her release and channel some of her anger and frustration.

Brooks also made some attempts to focus the team on the research project during these first two phases. On several occasions she repeated the idea that she was "task oriented" (Documentation, 10/28/81) and suggested that the team think about where it was going. She also called the team's attention to ideas presented in articles provided by the university researcher, such as the importance of finding a research problem to which everyone would be committed. Her suggestions and comments were accepted but not often used at this point in the project, the result of the team's unreadiness to confront its task and Brook's less dominant position in the group.

A shift occured in Brooks' behavior and position in team meetings from phase two to phase three. She initiated, to a large extent, the team's concentration on its research question and design in phase three by bringing some information on null hypothesis testing to a meeting in late March, 1982. Throughout phase three she tended to control team discussions, asking questions, intitiating topics, and bringing the group back on task. During a team meeting in May, for example, the university researcher wrote the agenda and asked if there was anything to add. Brooks replied, "That's a lot - okay, let's get started." During several meetings at this time she also asked questions to introduce new tasks or ideas, the pattern initiated by the university researcher in phase one.

As a result of her control over the team's process at this point, Brooks also directed the research project. Teacher morale was one possible research problem discussed by the team in April and May, 1982. Brooks showed special interest in this topic, partly because of her personal frustrations with teaching. She had done some outside reading on the topic and had spoken with a professor at the University of New Hampshire who had done research on teacher burnout. Her strong interest in the issue motivated her to encourage the team to investigate teacher morale. Her leadership in the research topic and group process came at a time when the team felt a strong need for a focus. As a result, her impetus to move forward on the issue of teacher morale carried the team through the clarification of its research question and design and into the implementation of data collection procedures in phases three and four.

Brooks saw her increased participation and control during this phase of the project as the result of her greater familiarity with research. In her case, as with Jack, a greater knowledge base gave her the self confidence and the recognition from others needed to direct the project at this point.

> Brooks: When we were trying to hammer out what kind of research design, I felt more comfortable with that having had that as part of my educational experience. ... Where it was seen as railroading from other people's standpoint I sort of felt at times like ... there's a decision to be made, let's get on with the show. Here's the information, okay, let's make a decision.
>
> (Interview, 6/83)

At the beginning of phase four, Brooks continued to be more directive during team meetings, explaining what needed to be done and getting the team to focus on agenda items and research tasks. Her task orientation and position in the group contributed to the increasing tension between Brooks and Ted which resulted in the controntation described in the section about phase four. Even here, Brooks controlled the interaction, choosing to initiate the confrontation when Ted re-entered the room and effectively ending it by returning to a specific research task.

Brooks also continued, during phase four, to use team meetings as a forum within which she could voice her concerns about teaching and work through some of the problems she experienced in her classroom and the school. For example, on

October 6, 1982, she described an incident with a student which had led to a confrontation with the principal. During nearly every meeting which followed through December, 1982, Brooks again raised this issue, bringing in new but related events and interactions. Other team members supported her in these discussions, asking her what had happened and agreeing that she was in a difficult position. In December, Brooks reached some resolution on this particular issue with the administration and spent less time discussing it during team meetings. This pattern illustrates, however, her use of the meetings to deal with personal and professional concerns not necessarily related to the project.

Brooks began to move out of a leadership position in the group during the middle and end of phase four, partly as a result of the stress she felt from teaching but partly because the team was moving into data analysis and presentation of results, areas in which she felt less proficient. In late November and December, 1982, Brooks almost left or did leave three meetings early, saying she was tired and unable to work. During phase five, she frequently mentioned her exhaustion, sometimes using it to explain why she had not completed a task she had agreed to do. Other team members provided less support for Brooks' personal issues raised during team meetings in phase five. Her comments about having had a bad day or feeling burned out or unwell elicited few responses from team members as they concentrated on data analysis and report writing. When such statements were unacknowledged, Brooks tended to involve herself in the task at hand, often shifting from a negative, somewhat self-centered mood at the beginning of a meeting to a more positive, task-oriented perspective by the meeting's end.

Brooks herself noticed the shift in her position in the group over time:

> I think that from my own standpoint there were times when I felt more on the inside and as a driving force and there were times when I backed down and felt more on the outside, felt more like wherever the group goes I'm going with them but I'm not directing and I'm not active but I'm there as a part of the group and supportive.
>
> (Interview, 6/83)

She saw herself in this less active role during the last phase of the project:

> I felt that it sort of fizzled a little bit .. in terms of my feeling in control of what I was putting into the group. I felt that I just didn't have much to give. ... I felt that I was too distracted by what I was doing in my class, all of the other things that were evolving around the end of the school year.
>
> (Interview, 6/83)

Despite her less prominent position in the group during the second half of year two, Brooks finished the project feeling that she had benefited from it. Her roles in the project and the use she made of team meetings contributed to her perception that the experience was valuable to her personal and professional development as a classroom teacher.

John

John himself aptly described his role during the first two phases of the project:

> As far as my role's concerned, I just like to talk and discuss, so that's what I do.
>
> (Interview, 12/81)

John willingly participated in school context and problem identification discussions and survey preparation, administration, and analysis during the first five months of the project. He freely discussed his views of school issues from the vantage point of a 17 year veteran of the junior high school and occasionally initiated topics of interest. John used his log to write short position papers on school issues which concerned him, and shared these writings with other teachers and administrators in the school.

John later claimed that he was confused about the team's purpose and the part he would play in it during the first two phases of the project, although his discomfort was not apparent during team meetings. In February, 1982, he offered to do a brief history of the school documenting changes which had occured in the last ten years. The history would provide a basis for whatever research project the team chose, and would clarify much of what they had discussed over the past few months. John saw the school history as useful to the team even if it did not contribute to their overall project. For John, doing the history marked his real entrance into the group process.

> I mostly did that because I felt I should be doing something, and that part I knew ... It was mostly my way of doing something besides just comments at meetings.
>
> (Interview, 5/82)

> I got all the way up to like February before I felt I was part of the team. I was there, I was doing some logs, I was listening to other people, and I had no feeling of belonging to that group, because although I would say things I just felt I wasn't contributing. And then I said to Sharon, I think I'm going to write a history ... and then I felt like I was part of things.
>
> (Presentation at UNH, 5/83)

During discussions of research design and methodology in phase three, John listened to others and asked questions about research procedures. On several occasions, he suggested that the group postpone a decision about the research, saying he needed time to digest all of the new ideas presented at a meeting. This phase appeared to be one in which John gained a greater understanding of research in general and the team's particular project. His learning in this phase allowed him to feel more comfortable with the project and to assume a more directive role in phases four and five.

John provided Brooks with support in phase three and throughout the project. They frequently discussed the project, teaching, and the school (their rooms were across the hall from each other); and their shared opinions and understanding often carried over into team meetings. In phase three, John supported Brooks' direction of the research topic and design. At one meeting, for example, John agreed that the team should investigate teacher morale as measured by the MBI. He then said to Brooks, "And now do you want to explain why we have to go with evaluation research?" (Documentation, 5/5/82). In other phases John provided support for Brooks by empathizing with the difficulties she had as a special needs reading teacher. He noted, for example, that her class was an "exceptional group of students" (Documentation, 10/27/82) and pointed out to Ted that Brooks' situation was more stressful because she had no opportunities to meet with other teachers (Documentation, 11/10/82). John's support both during and outside of team meetings gave Brooks some of the recognition she needed to stay with the project and ultimately come to value it as a positive experience.

John's growth in understanding, confidence, and sense of having contributed to the group during year one culminated in his presentation at the National Staff Development Council conference in October, 1982. John experienced the conference as a validation of what he and others had done, and brought back from it a more all-encompassing vision of the team's research project. As a result of his broadened perspective and increased confidence about himself as a researcher, John assumed a more directive role in the group in phases four and five. He noted his different behavior on the team in years one and two:

> I think that my purpose on the committee is representing lots of people, getting their view across to other members. ... Also, I think that I see some of the long term thing that we are doing and can kind of push in that direction.
>
> (Interview, 12/82)

> I was probably more outspoken in the second year than I was in the first year. ... I thought, well fine, nobody else seems to know what's going on so I'll say what I want. ... In the second year it didn't bother me to express an opinion because sometimes I could

> express an opinion and nobody else had thought of that and therefore it was okay because it stimulated ... a good discussion.
>
> (Interview, 6/83)

Because he perceived that he lacked skills in data analysis and writing, John's leadership in year two did not consist of identifying and carrying out specific tasks. Instead, John provided the "bigger picture" of the project, often, for example, answering Elliot's and Ted's questions in phase four about the value of the project and the use of particular data collection tools. He also frequently established processes for carrying out tasks during team meetings. In one team meeting, for example, he took computer printouts from Elliot, gave them to Brooks to identify, looked them over, and passed them to the university researcher to analyse. He also contributed his analysis of the data whenever he felt it was appropriate, often speaking from his perspective of veteran teacher. Other team members appreciated the point of view he brought to the research task:

> Brooks: (John) gave a perspective sometimes on ... an overall sense of what had gone on, also critical evaluation of well ... are we saying that in a global sense or did that really happen? ... And also giving you the personal perspective of how the research has impacted the school and where it might impact the school. He's had such a broad experience; he's been here the longest so he has more experience to draw from.
>
> (Interview, 6/83)

John also served as the team's liason to the school and school system administration in year two, a position Jack might have filled had he stayed with the team. John noted that as a result of participating in the group he had become more active in the school, in part because he had taken on this liason position. This role began in phase one, when John shared his logs with other school colleagues, but became more formalized in phase four when he initiated a meeting to discuss the project with the assistant superintendent and subsequently presented a description of the project at a system wide staff development meeting. Because of his familiarity with the school and system and his willingness to carry out this role, John became the team's spokesperson in the school. Although he resisted principal input on the final report, John ultimately volunteered to invite the principal to a meeting to discuss the team's findings and conclusions.

John's increased feelings of competence and skill, his process leadership in year two, and his position as team representative at conferences and in the school and system all contributed to his strong feelings of project ownership and his positive valuing of the project. At the end of the two years he had plans for continuing to use pieces of the project (documentation, teacher collaboration) in several ways. He also planned to use his new skills to try to change aspects of the school which concerned him and to write about teachers doing research.

Elliot

In Elliot's initial interview he questioned his commitment to the team and to education in general. He spent part of the first year of the project taking courses in accounting with some thought toward leaving teaching at the end of the year. Although his move to the high school at the beginning of the second year of the project satisfied some of this concerns, his early participation on the team may have been affected by his initial hesitancy about becoming involved in a school-related project.

Elliot was fairly quiet during team meetings in phase one, occasionally contributing opinions and ideas, but often listening to others. He, like Brooks, raised concerns about confidentiality. He also expressed pessimistic views about the lack of respect for teachers and the impossibility of changing anything in the school or system. He gradually became more comfortable with the group, saying, for example, "I enjoyed that session last week. I was surprised at how, I mean as a group I thought we performed much better than anticipated" (Transcript, 10/28/81). This kind of meta-comment about the group process characterized Bob's contributions in phase one and throughout the project. He more than other team members saw the group involved in a process which would eventually lead them to a well-defined research project. During the fifth team meeting, for example, he tried to clarify where they team had been and where it was going:

> Let's say that we had identified a body of problems and then if we also get a common base, an understanding of all the things involved in the project like change and the action research process itself and - there's a couple of other necessary things, like these articles - so anyway, once we get this groundwork laid, we're just about to that point now ... where we can identify a problem, choose it, ... plan a change action.
>
> (Transcript, 11/18/83)

As a result of his sense of where the group was going and his desire not to repeat what they had already done, Elliot volunteered to draft the School Opinion Survey. His action established a norm, noted in the section on phase one, of individuals drafting work for the team to edit. Throughout phases two and three, Elliot continued to volunteer for concrete tasks (visiting other schools with Jack, drafting interview questions) and to provide the team with a sense of its overall process.

In phases two and three, Elliot also contributed his opinions about the focus of the team's research. He said he hoped the team would "generate data" and "produce new information"

(Documentation, 2/3/82) and not just read articles and interview people from other schools. He was especially interested in examining the effects of scheduling practices on student achievememt. At one point Elliot noted that his "personal feeling was that all this research on teacher morale is useless" (Documentation, 4/21/82). Although Elliot made his point of view clear in phases two and three, the team chose to investigate teacher morale. Again, Brooks and John made this decision during a meeting from which Jack and Elliot were absent. Both Jack and Elliot agreed to the choice in subsequent meetings, retaining the options of visiting other schools and perhaps investigating the relation between teacher morale and student achievement. Elliot's low key but useful participation in team meetings in year one did not allow him to override Brooks' choice of topic, nor, perhaps, did he wish to exert the energy needed to redefine the topic and carry out a different project. He himself noted that he became less assertive near the end of year one as others on the team assumed some of the roles he had filled in phases one and two. He said that he began to contribute less at this time,

> ...because other people began to be more confident and seemed to understand better what the goals were and what they contributed in relation to the goals, so that contributions on my part weren't needed.
> (Interview, 5/82)

As a result of his minimal commitment to the research topic at the end of phase three, Elliot entered phase four with questions about the value of the project and the tools used to conduct it. As mentioned, other team members supported Elliot through this phase, and he himself came to see his actions as useful to the team rather than a questioning of his own commitment:

> Mainly in my mind those questions I guess were rhetorical in nature and trying to get to the issue of will this plan that was evolving - is it going to work? So that was what was going on in my head as I asked those questions; in other words, pretty soon it's going to be April and if we're going to be anywhere for April let's make sure that we're following a path that's going to take us somewhere.
> (Interview, 6/83)

As Elliot resolved his questions in phase four, he became very active in creating computer programs for data analysis and pushing the team to outline and begin work on its final report. He worked closely with the university researcher on data analysis, choosing what data to use and how to structure the programs to provide desired correlations. While John provided the team with procedural leadership and an optomistic sense of what the group could accomplish in phase five (what Thibaut and Kelly, 1959, call maintenance functions), Elliot guided the team through choices of what data to analyse and how to analyse it and present it to others (task functions). For example, although Elliot advocated using team time to write the final report as a group, he often did much of the writing himself by composing aloud as others wrote. Once he had established this process, others used it and contributed to the writing, but Elliot continued to dominate the composing process.

Other team members saw Elliot as the team's leader during phase five because he initiated much of the work and had the knowledge needed to carry out many tasks. Elliot himself minimized his contributions, saying that he chose to work on the computer because, "I wasn't necessarily interested in reading a bunch of articles on burnout and I wanted to do something" (Interview, 6/83). He did note, however, that throughout the project and especially toward the end, he led the team by organizing and acting when others could not:

> I guess through the whole thing I probably did best in terms of facilitation. ... One thing I did was try to set out on paper what members of the group were telling me they had learned or what I thought they wanted to say. ... In other words, when I felt people were floundering, trying to say something or talking something to death, I would say something to the effect that, 'Okay, I'll write this out and see what it looks like.'
>
> (Interview, 6/83)

Ted

Ted was the only team member who did not assume a leadership position at some point during the two year project. He was, in fact, only peripherally involved in much of the team's work, although he attended most of the meetings. Throughout the two year project, the only research tasks Ted performed were those carried out by all team members: administering surveys, interviewing colleagues, and writing up a section of the research proposal. When asked about his part in the project, Ted noted that he contributed "ideas and suggestions" (Interview, 12/82 and 6/83). He also defined his participation in terms of the amount of enthusiasm he had at different points in the project, suggesting that the enthusiasm itself was the contribution he made. His minimal involvement in the research task created problems in the group's interaction and resulted in Ted feeling less positive than other team members about the value of the project for himself and the school.

During phase one, Ted actively participated in school context discussions, frequently asking Jack and John questions about school policy and history. He continued to participate more actively in this kind of discussion than any other during the two years of the project, often pursuing tangents and details unrelated to the original discussion or the research task. For example, at a meeting in February, 1982, the team was discussing the possibility of comparing scheduling practices and student achievement in their own and other schools. John pointed out that they would have to take into consideration unique aspects of their school, including the transitory nature of the student body which resulted from serving nearby air and naval bases. The team continued to discuss possible data collection procedures until Ted asked, "Given what John said (about the changing student body), what does that do to our system?" John responded and other team members joined in until the university researcher re-initiated discussion of data collection (Documentation, 2/10/82).

Ted's frequent use of questions carried over into other phases. His questions tended to fall into two categories: those which prolonged school context discussions, most of which were tangential to the research project (described above), and those which focused on how to carry out the research project. Ted often asked the university researcher questions about doing research, such as, "Who says something is reliable?" (Documentation, 3/23/83). Some of these questions and those he raised about specific aspects of the project provided the team with an opportunity to clarify its project design. The same questions, and those which prolonged tangents, also led other team members to believe that Ted did not understand what they were doing.

> Brooks: He's frustrating sometimes; I feel like sometimes he holds the group back because he gets these off the wall questions and it's like, 'We just twenty minutes ago covered that - where have you been?
> (Interview, 5/82)

During phases two and three, team members occasionally teased Ted about his lack of task assumption. During one discussion about which other schools the team should study, for example, Jack said, "We'll look at 374 schools and Ted will do them all over the summer" (Documentation, 3/31/82). Team members also tried to find tasks with which Ted would be comfortable and offered to work with him on them. Brooks, for example, had examined the printout of ERIC materials on scheduling and suggested to Ted that he might be interested in one article in particular on scheduling issues in a social studies program. When the university researcher asked if someone might like to look at the history of the school, Jack again teased, "Well, Ted's a history teacher." John said he would work with Ted on a school history. Ted did not respond to the teasing or to direct suggestions or offers of help (Documentation, 2/3/82; 3/3/82).

When asked about the tasks he performed for the project over the two years, Ted said, "The things that I did were things that I knew that I had time (to do), and if I couldn't do it I wasn't going to volunteer" (Interview, 6/83). Especially in year two, Ted cites increased family demands as one limitation on the time he could devote to team work. He frequently questioned the amount of time spent in team meetings or needed to carry out research tasks. Although other team members recognized the time pressures

Ted felt, they also believed that his lack of involvement and commitment prevented him from being a full-fledged team member.

> Brooks: I felt a real tension with Ted - that he was less and less committed to the group and was really withdrawing. ... I felt that he came to the group and was sitting on the outside, physically almost sitting on the outside and was always pressured - I always thought he had a time problem with meeting with the group, like it was a real problem to get here.
> (Interview, 6/83)

By the end of phase three and into phase four, team members had stopped teasing Ted or suggesting he take on certain tasks. As they became more task oriented and devoted less team time to group process or interpersonal issues, they seemed to have less time to encourage Ted to participate. In May, 1982, Brooks noted,

> My feeling ... is there's so much work to be done before June fifteenth to get this really firmed up that I think ... if the person doesn't feel a part of the group the person will have to fight into the group ... at this point, and find their own place.
> (Interview, 5/82)

In phase four, Ted continued to be fairly un-involved in the project. His perceived lack of participation and understanding led to conflicts with other team members, described in the section on phase four. Ted explained that during this time especially he felt removed from the project because he disagreed with the team's choice of topic.

> Ted: I think I had a low point when we went away from talking about scheduling and went on to something that was a little more hard to pin down - burnout. I think I lost a little bit of enthusiasm during that period. ... (Burnout) is important no doubt, but I was afraid we'd end up with results that would really not be concrete for most people and then it would just be another file that would be put away in someone's desk.
> (Interview, 6/83)

Some of Ted's questions and comments during phase four suggested that he felt the team had moved away from its original goals and committed itself to a project which would be of little immediate or practical use. In phase five, as the team began to write its report and discuss how their results might be used, Ted shared some of his concerns with the team. Although he recognized they had limited power in the school, he felt they could have investigated a topic with more direct applications for teachers.

> Ted said, "We started out to make the school better." Elliot said, "You did." Ted said, "We were going to different schools and then we said we'd make changes

> here. ... But now we've given all that up so we haven't done original research."
>
> (Documentation, 3/13/83)

> Ted: I don't think that (our project) is going to do anything to help the school. .. I still don't think (our project) is going to have as much value as if we had stuck to the original thing we were going to do - mostly scheduling.
>
> (Interview, 6/83)

When asked if his feeling about the project topic had influenced his participation, Ted said, "Well, I would say maybe unconsciously, I am sure it did. If you see a goal that's going to ... have a direct effect on you, I think I would be more apt to do a lot of other things" (Interview, 6/83). Ted also explained that he did not voice his objections and try to change the team's direction because he did not want to be an "obstructionist ... to set up action where one would be against the other ... I didn't want to set up bad feelings between people" (Interview, 6/83).

After the confrontation over task assumption in phase four, Ted appeared to be more concerned with fulfilling his responsibilities on the team. He carried out his staff interviews before other team members had done theirs and offered to help with other shared tasks. During meetings at which the team worked on data analysis and report writing in phase five, Ted remained less involved than other team members, although when asked to take part he did so willingly. On a few occasions, Ted tried to initiate a process for performing a task or offered to do a part of a task that someone had already begun. Other team members never acted upon his suggestions and often ignored or rebuffed his offers to help. Thus even when Ted tried to become somewhat more involved, other team members refused to acknowledge him. At this point in the group process and project they did not want to take the time needed to include Ted in the research task. They based their rejection on his previous lack of commitment and involvement and their habitual assumption that he would not contribute or would slow down the process. John noted that after a point he refused to let Ted's lack of involvement concern him:

> John: I just couldn't be bothered with stuff like that. I didn't like it; I wish he'd taken a more active part, but if he wasn't going to he wasn't going to - why am I going to get upset about that?
>
> (Interview, 6/83)

In many ways, team members had dismissed Ted by the beginning of phase five, believing that his perception of the project and its goals did not match theirs and that he would not help them with specific research tasks.

Ted showed a renewed interest in the project at the end of year two. Although he did not present at AERA, he did read a piece of the report at the University of New Hampshire faculty colloquium and actively participated in the follow-up discussion there. He was also involved in the team meeting attended by the school principal, asking questions and stating his opinions. Again, Ted enjoyed these school context related, abstract discussions of what might and should be.

When asked what he would take from the project, Ted spoke in general terms about teachers being able to do research and the school possibly following through on some of the team's work. He did not suggest that he would use new skills or ideas in his own classroom or professional life, and he indicated that he would not be involved in further investigation of teacher morale or action research. He had some ideas of what kind of follow up could happen, but when asked if he would pursue them, he said, "I feel all fired up about it now, but when the fall rolls around you start a whole new year of school, and I don't think so, to be honest" (Interview, 6/83).

Ted's lack of involvement in the project is complex. He saw himself as an active and enthusiastic team member for most of the project and cited time pressure and some disagreement with the team's research topic and goals as reasons for his decreased enthusiasm during phase four. Observation suggests, however, that Ted participated minimally throughout the project, taking part primarily in school context or tangential discussions and carrying out only those tasks expected of all team members. Other team members saw him as "relatively helpless in this endeavor that we went through, so other members of the team carried him" (Elliot, Interview, 6/83). Most team members refused to "carry" Ted past phase three or four and established patterns of interaction with him which included frustrated tolerance and exclusion. Only Elliot continued to work with Ted through phase five when he had the time to do so.

Ted's lack of commitment to the research topic and the team's process-oriented goals may have contributed to the lack of carry over he experienced from the project into his own personal or professional life. Because of his minimal involvment, he seemed to experience little personal or professional development through his participation, and did not foresee using new skills or ideas in other contexts. The same unwillingness to become involved seems to be what Ted will carry over into his future work.

Researcher Role

Like individual teachers' roles, the role of the university researcher changed in accordance with the interpersonal and task demands which characterized each stage. Her roles, even more than those of teacher team members, reflected both her actions and the position accorded to her by others in the group. Figure 8 summarizes the researcher's roles during the two years of the project.

Throughout the project, team members consistently saw the university researcher as a group leader. Even when they identified themselves or other teachers in leadership roles, they placed the university researcher in the position of general facilitator, the person who ensured that the team completed its project.

> John: I think she's been more or less the organizer to see that we've met and had stuff there, that we've got stuff done if we said we were going to get it done. She's been the leader in that fashion. It's sort of leading by pushing rather than leading by being in front. I think that's the way (she) has lead us, by pushing us slowly and steadily toward our goal, which is good.
>
> (Interview, 6/83)

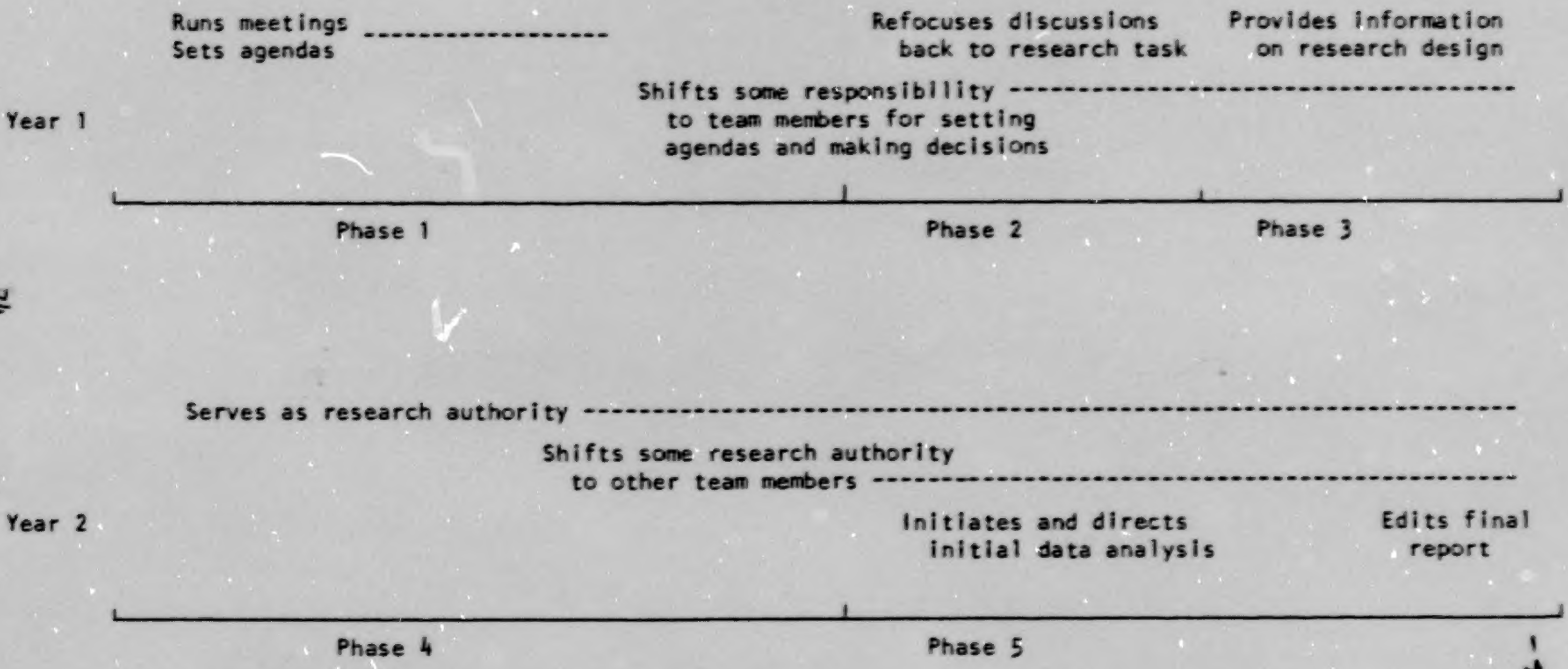
> Brooks: As the research group went on, (her) role - sometimes it was directing, sometimes it was 'okay, we need to do this and this' just from the standpoint that this is the timeline, these are the nuts and bolts of the research. ... But the content of the meeting, more or less, was our input.
>
> (Interview, 6/83)

In phase one, the university researcher convened the group and provided agendas for the first four meetings. Team members perceived of her as the group's teacher and assumed she would fill the expected role of university professor. They referred to the questions she asked them to address in their logs as "assignments," and Jack suggested that she could collect and evaluate their logs after a few weeks and tell them "what was missing, what you want in them" (Documentation, 10/21/81). Team members looked to the university researcher to run each meeting, and occasionally asked her permission to raise issues: "So what would you like us to start on? Talking about these questions?" (Documentation 10/21/81). They also mentioned their expectation that the researcher would guide their research process and project:

> Elliot: Well, the group has met and nearly overcome the first obstacle, selecting a research topic. Next we must plan our research. I hope (the university researcher) has concrete guiding

Figure 8

Role of the University Researcher


Runs meetings
Sets agendas
Refocuses discussions back to research task
Provides information on research design
Shifts some responsibility to team members for setting agendas and making decisions
Year 1
Phase 1
Phase 2
Phase 3
Serves as research authority
Shifts some research authority to other team members
Year 2
Initiates and directs initial data analysis
Edits final report
Phase 4
Phase 5

> suggestions in this regard. An approach assigning group members to read and report on various secondary sources would be appropriate.
>
> (Log, 11/20/81)

> Jack: I don't know how the process is going to work. ... I think you're going to have to lead and guide this team in the actual doing of processes and methods.
>
> (Interview, 12/81)

Teachers' expectations of the researcher role in phase one grew out of the project structure and their previous experiences with the university. Because the university researcher convened the group, team members expected her to direct it. Given their feelings that they knew little about research, several team members expected the researcher to teach them or guide them, "by discovery maybe, through questioning, not spoonfed" (Jack, Interview, 12/81). In previous interactions with university faculty, teachers had found that the professor conducted a class of some kind, and they assumed that this "course" would be similar. Several expressed pleased surprise that this was not true. Ted, for example, said that he originally questioned his participation in the project,

> ... because I thought it was gonna be the same type of of thing. You would run the thing and we would just sit here, and you were the university teacher and we were the junior high teachers. ... We were going to have to agree to everything. But I'm glad to say I haven't found that ... I think all of us feel equal.
>
> (Interview, 12/81)

During phase one, the university researcher gradually moved away from a directive role and into a more facilitative role. She no longer established agendas; she asked team members what the agenda should include. In this and subsequent phases she turned questions directed to her as group leader back to the team. For example, during the discussion of whether or not to meet the following week, Ted asked her what she had planned for the team for next week. She replied that she had no plan; the team set the agenda. When deciding whether or not to replace Jack, Ted suggested that the university researcher would know better than the team about the needs of the research. She suggested that they as a team needed to evaluate task demands and the issues involved in adding a new person to the group. When John asked what she would like him to cover in his presentation to the National Staff Development Council, the university researcher responded that she would like to hear what other team members thought. If asked by a team member to make a decision for the team, the university researcher more and more frequently re-raised the question as a team issue.

The university researcher's shift away from direction and towards facilitation in phases one and two made some team members uncomfortable. Both at the time and in retrospect, some team members noted that they would have liked her to take on a more directive role, despite their appreciation of being able to "have their say."

> Ted: The only negative thing is that some of the time we spend on Wednesday ... we fool around too much, we get off the subject. Maybe a little tighter rein is the only thing.
>
> (Interview, 12/81)

> John: I think there was, in the first year, a mistake was made in not getting us organized a little bit quicker into what we were doing. I think we dragged on too long and then had to make a lot of hasty, fast decisions. ... I think that it should have been at least pointed out that we've got to start to make some decisions ... and maybe that could have been the focus from the research people, saying, 'Okay guys, this is it; you're going to need to come up with something for now.'
>
> (Interview, 6/83)

Brooks, too, noted that the team wanted the university researcher to be "leader" early in the project and that they became frustrated at times when she would not assume that role. Brooks and others ultimately saw the university researcher's facilitative role as the best one possible for the team, however, because it allowed teachers to learn about research and have ownership in the project.

> Elliot: ... the five teacher researchers need to have feelings of involvement, and strong-armed or even coercive ... leadership in those early times might have been comforting to the teachers but they needed to feel involved.
>
> (Interview, 6/83)

> Ted: I was new to the idea that all of us had an equal say in the thing. I thought it was going to be run by the university researcher. At first I thought ... she had let us go too far, that we were at a lot of meetings that seemed to go over and over the same things. But I think as it evolved it produced the idea that we were equal and a lot of people had a lot to say.
>
> (Interview, 6/83)

During phase two, the university researcher's facilitation consisted of redirecting school context and other far-ranging discussions back to the agenda or the research task. At times her comments attempted to link the discussion to the team's research problem. For example, in a discussion about school board and superintendent decisions which affected the school, the university researcher observed: "It sounds like an example of teachers making change and the lid coming down on them, an example of the process of change in the school." As the discussion continued she said, "You talked before Christmas about the change process here and wondered what it would do to morale if half the teachers were in favor of house coordinators and the change was made to department chairs" (Documentation 2/3/82). Team members tended to disregard these indirect attempts by the university researcher to refocus the team on its research project.

Occasionally, the university researcher directly moved the team to its next task, saying, for example, "I feel we should go on," and raising another agenda item for consideration (Documentation 3/24/82). In most cases, the team followed her to the next task, although they often used it as a way of continuing previous discussions. Despite some team members' desire for more direction at this time, they did not always recognize or accept it from the university researcher when she offered it directly or indirectly. Until the team was ready to concentrate on its research design and question, the university researcher could only help them maintain a sense of what they had done to that point. Neither she nor other team members could direct the task until the team had chosen to address it.

In phases one and two, and at the beginning of phase three, the team depended on the university researcher to make an agenda, run the meetings, and dismiss the group. If the university researcher missed a meeting or engaged in conversation with one team member during a team meeting, discussions among other team members tended to be non-task related. If the university researcher had to leave a meeting early, team members left soon after, even if she had suggested other tasks they might think about.

A shift in this aspect of the researcher's role occurred in phases three, four, and five as other team members and the research project itself began to control team meeting time. If the university researcher missed a meeting, the team made an agenda and continued to work on research tasks. In phase five, they even scheduled one all day meeting when all team members except the university researcher could attend. As the team established and became comfortable with operating norms and developed a clearer understanding of their research project, they did not need the university researcher to control the group process. Instead, the researcher could be used by the team as a resource person who could provide knowledge and direction in research methodology and research standards.

As mentioned, phase three began when team members asked the university researcher to bring in model research designs. This marked the first time the team had requested the university researcher's help as a researcher. In phases three and four, the university researcher's role tended to be that of research authority, a role based on her greater knowledge and experience in the field of educational research rather than on her status as university faculty member.

During phase three, the university researcher presented the team with information about kinds of research (qualitative versus quantitative) and research designs (research and development, comparative research, evaluation research, etc.). Because she controlled the content of team meetings, the university researcher also directed the process at the beginning of phase three, moving the team from one issue to the next and openly pulling tangential discussions back to the task. She said, for example, "I want to come back to the research" (Documentation 4/14/82) to close a discussion unrelated to research design or research question. Team members began to ask the university researcher questions about reliability and validity of data collection tools and about the external validity of their project as a whole, indicating their perception of her as research authority.

The university researcher retained the role of research authority throughout the rest of the project. Team members continued to ask her research questions about techniques for data analysis and expectations others would have of their work. They also suggested that they needed her to do much of the team's data analysis. As teachers became more confident as researchers and began to assume task and process leadership in the group in phases three and four, the university researcher shifted some of her research authority to others, just as she had previously shifted control of group processes and decisions back to the team. When Elliot suggested that she should work on the findings and conclusions sections of the final report, "picking out trends and significant findings based on the analysis of the information," the university researcher agreed to run some statistical tests. Because the group had done so much work on the surveys, however, she said she was reluctant to do the rest of the analysis herself (Documentation, 2/9/83). As a result, the team analyzed the surveys and wrote those sections of the report together. Team members assumed positions of authority in phases four and five in part because of their greater understanding of the project and developing ease with research. The university researcher's actions provided them with space within the group process to take on those tasks and positions and the encouragement to do so.

At the beginning of phase five, the university researcher took on a more directive role, similar to the one she had assumed at the onset of phase three. In January, 1983, the team had collected all of its data, and Elliot had begun to create computer programs to aid in analysis. The university researcher began some of the data analysis on her own, specifically the statistical analysis of significant change in levels of teacher morale from year one to year two. During several meetings in January, 1983, she presented her findings and directed the team into analysis of pre and post test results of the School Survey administered with the MBI. Her directive role at this point in the project provided an impetus for the team to assume responsibility for data analysis, just as her direction in phase three gave the team the background it needed to make decisions about research design and question. In both cases, once she had provided the catalyst she stepped back into a less directive position, working with the group rather than leading it. Her intervention at these times served to move the group forward on its task. Because roles in the group had become fluid and because the university researcher had indicated her desire for the team to arrive at its own decisions in phases one and two, her direction at the beginning of phases three and five was accepted as natural and helpful and not as an imposition of power or an attempt to control the group process.

As a result of her tendency to facilitate rather than direct (except when her knowledge of research was needed by the team), her acceptance of other team members as group leaders, and her tendency to redirect group process decisions and questions about the research project back to the team, other team members described the university researcher as a colleague. Team members appreciated this new form of interaction with a university professor and felt it contributed to the value of the experience:

> Brooks: You became a colleague, as an equal, and it didn't seem that you had any difference in terms of status in the group than anyone else. ... Just because you were there didn't mean that ... your ideas were ... more important than anyone else's.
> (Interview 6/83)
>
> Ted: It's nice that we can sit at equal stations and sit and talk and derive some solution instead of having it told to you or jammed down your throat.
> (Interview, 12/82)
>
> John: As a group of teachers, it was best we had to do it this way ... if it's going to be valuable to us as individuals, not just valuable because we have a paper done and a few recommendations.
> (Interview, 12/82)

Elliot pointed out that "when university people go out and work with teachers it breaks down the ivory tower concept" (AERA presentation, 4/83). Team members agreed that colleagiality with a university faculty member was a valuable part of their experience.

The university researcher's role changed to meet the team's interpersonal needs and research task demands. As team members began to get to know one another, establish trust, and develop norms during phase one, she provided an agenda and a meeting structure. As they worked to identify a researchable problem and appropriate data collection tools in phases one and two, she occasionally summarized what they had done and refocused discussions. When the team indicated their readiness to concentrate on research design and research question in phase three, she provided information and direction, but as other team members assumed task and process leadership in phases three and four, she followed them. In phase five, she again led the team into data analysis, providing the impetus needed to focus on that set of tasks.

Throughout the project the university researcher shifted process and task responsibility to other team members whenever possible. She herself described her role as contributing the skills she had, contributing to some standardization of research results, and also facilitating the team working together so "it's not just me doing the research" (Presentation at UNH, 4/83). The decisions and actions which grew out of this role left room for team members to become comfortable with themselves in the role of researcher and to assume the process and task responsibilities which arose in each phase. Thus, while many of the university researcher's actions and roles arose out of the interpersonal and task demands of each phase, they also affected the process the group experienced and contributed to the personal and professional value team members attributed to that process.

Support/Pairing

Team members also assumed roles in relation to each other, occasionally challenging but often providing emotional and task support. As I have mentioned, the primary challenges arose between Jack and the university researcher in year one and between Brooks and Ted in year two. Patterns of support appeared especially in year two as the team began to focus on its research task. One support pair which emerged consisted of Brooks and John; the other was Elliot and Ted. These pairings reflected team members' friendships and relationships existing prior to group formation. Ted noted this when asked if he thought relations among team members had changed over the two years of the project:

> Ted: I would say that most groups could have already been defined before they started, Elliot and I being neighbors and John and Brooks being neighbors. I think that we became groups within groups, but we did at times I think, become one big group also.
> (Interview, 6/83)

Bion (1959) suggests that group members establish pair relationships to fulfill their need to discuss individual problems. In doing so, they tend to divert the group from its work or task. Others studying group processes (Cartwright and Zander, 1968; Thibault and Kelly, 1959) tend to focus on the group as a system, avoiding analysis of subsystems of team members. In this group, the pairing which occurred tended to be supportive and, for the most part, beneficial to individual team members and the group as a whole.

As suggested, John and Brooks shared many ideas and concerns during and outside of meetings throughout the two years of the project. Their relationship began to have a direct effect on the group in phase three, during which John's support for Brooks' direction of the group contributed to the team's decision to study teacher morale. During phase four, John continued to support Brooks on both task and emotional issues. For example, knowing that Brooks had found some information on scoring surveys, John provided her with an opportunity to bring that information to the group, asking her, "Now do you want to explain the scoring?" (Documentation, 11/3/82). On many occasions John supported Brooks in her discussions of personal frustrations, noting that she held a difficult position in the school. In phase five, John offered Brooks less support on her emotional concerns, but continued to work with her on task issues. For example, Brooks and Ted were supposed to have collaborated on a presentation for AERA, but John suggested that, given apparent tensions, he and Brooks should do that presentation. Brooks noted that John was helping her with her part of the presentation by talking about the ideas over coffee (Documentation, 3/30/83). During meetings in which he directed the process of data analysis, John often provided Brooks with tasks or accepted her help, an inclusion not always extended to Ted, as noted above.

Brooks' support of John was more subtle and took the form of adopting and using his ideas and concepts. John, for example, believed that one important finding made by the team was that teachers' perceptions of events and changes determined their attitudes as much as the events and changes themselves. Brooks picked up on this idea and used it in subsequent meetings and presentations. In his final interview, John noted the connection between Brooks and himself:

> John: There were times when I might have said something or Brooks might have said something and it was really in defense of the other. ... We were more closely linked, I think, than any other two people in the project.
>
> (Interview, 6/83)

John's support of Brooks on task issues frequently moved the team forward on its research project. His support of her emotional concerns often gave her the recognition and acceptance she needed to shift away from those concerns and back to task demands. On several occasions their interaction before team meetings prevented Brooks from skipping a meeting and kept her frustration with Ted from prohibiting task completion. Their mutual acceptance and use of each other's ideas often provided a basic consensus upon which the group built its research design and final conclusions. Their pairing thus contributed both to their individual satisfaction with the group experience and the team's process and outcomes.

Elliot and Ted also formed a pair, although their mutual support was not as strong as that shown by John and Brooks. Like John and Brooks, Elliot and Ted taught in adjacent rooms and had established a friendship before the group began to meet. They, too, became more closely linked as a pair in year two, but their support tended to occur on task rather than interpersonal issues.

As noted, both Ted and Elliot questioned the research topic and project outcome in phase four. Although each had his own reasons and methods for re-examining the team's goals, their doubts may have been mutually supportive. When Elliot resolved his concerns and recommitted himself to the project, Ted, too, voiced fewer objections, despite his continued misgivings and lack of commitment. Only when the project was nearly complete and change was impossible did Ted re-raise his concerns.

Ted saw Elliot as a strong group leader during year two. He said,

> Ted: I think Elliot obviously has to be pointed out as one who is very talented in expressing himself and writing and coming to the heart of things, breaking things down. ... Elliot seemed to be the one who drew everyone together.
>
> (Interview 6/83)

Ted indicated to Elliot during and outside of team meetings that he would do whatever he could to help Elliot in data analysis and writing. Ted's support of Elliot therefore seemed to be his acceptance of Elliot as task leader and his willingness to help him when asked. Elliot's support of Ted, like John's support of Brooks, took more concrete forms. For example, when team members agreed to work individually on some sections of the final report in order to complete a draft before AERA, Elliot said he would work with Ted on one section. In his final interview, however, Ted noted that even during their sessions outside of team meetings Elliot did most of the writing because he knew the material more thoroughly.

Elliot and Ted were supposed to have worked together on their presentation for AERA. Elliot ultimately presented alone, because he had worked and reworked the talk with little input from Ted. Both Elliot and Ted felt badly about Ted's exclusion; in his final interview, Ted said he realized that Elliot knew the material and should have presented alone, but that he, Ted, would like to have been more involved at the conference. Elliot, too, recognized his own better understanding of the presented material, but felt responsible for not having provided a place for Ted in the presentation. Because of this, Elliot made a point of finding a piece of the report which Ted could present at the UNH faculty colloquium. He explained his feelings in his final interview:

> Elliot: Towards the end when Ted would seem to have been especially ineffective I kind of robbed him of

> his chance to participate because he and I were working together and I was - I don't know if there's a reason for it - if I was busy or we'll say I was just impatient and I kind of did everything, which he was happy to let me do. And in fairness to him I I should have had him do more of it. ... Then (at UNH) I finally felt good because I forced him to stand up and say something.
>
> (Interview, 6/83)

Elliot's support often allowed Ted to be a part of the group even when other team members had dismissed his participation. Because the responsibility Elliot felt occasionally compelled him to work with Ted on tasks which might have otherwise remained undone, their pairing may have contributed to the team's research as well as to Ted's personal experience on the team. Like the pairing of Brooks and John, that of Elliot and Ted benefited the individuals on the team and the research project they carried out.

Conflict and Decision Making

Conflict

Team meetings throughout the two years of the project were notable for their lack of overt conflict. The findings in chapter 8 of this report show that three of the five team members saw the team as a homogeneous community characterized by cooperation and solidarity. A fourth team member saw the group as a pluralistic organization, in which the individual subjugates self interests for the sake of collective interests and the group works together to achieve mutually defined ends. The one team member whose comments and actions suggested that he experienced the group in more pragmatic or self interested terms was Jack, who left the team at the end of the first year.

Because four of the five team members emphasized cooperation and collective goals, they tended to submerge or avoid direct conflict. When direct conflict did occur, as it did between Jack and the university researcher in phase two and between Ted and Brooks in phase four, team members tended to limit it or try to find ways to prevent its recurrence. For example, during the conflict between Jack and the university researcher about when to meet, Ted said, "I don't want this to be a crisis" (Documentation, 1/27/8[illegible]). Later, he told told the university researcher:

> Ted: I felt bad for you. I mean Jack was expressing his opinion, and there were others, and I was too. We left you with little choice of which way to go, so maybe if we had some sort of a policy on that ... you wouldn't be the fall guy, or the bad buy, or the one who has to make the tough choice. It would be easier for everyone.
>
> (Interview, 12/81)

Ted wanted to establish a policy to prevent this kind of conflict, but was unsuccessful in doing so (see Decision making). John was more successful in his attempts to avert conflict between Brooks and Ted:

> John: If at a meeting I noticed she was getting extremely intense in that direction I might sidetrack a bit to keep her from blowing up. ... I just don't like to see fights basically, and I would rather try and explain the whole thing away than have it come to a pitched battle because ... then you end up with so many hurt feelings you can't get the people back together again anyway.
>
> (Interview, 6/83)

In both situations, team members wanted to avoid further conflict because they were uncomfortable with it and because they felt it detracted from cooperative team work toward a common goal.

Less open conflict did appear during the two years of the project, but even this was limited. During phase one, team members occasionally argued about specific school context issues. They tended, however, to be tolerant of the diverse opinions raised, using the meetings as a forum rather than insisting on consensus. When an argument became too heated, a team member usually ended it by agreeing to disagree, changing the topic, or saying, as Elliot did, "We're supposed to be doing research about it, not arguing" (Documentation, 12/16/81).

An unspoken conflict existed between Jack and Brooks during phase one, based on their previous interactions in the school. From the beginning of the project, Brooks questioned the degree to which she could trust Jack. Each spoke with the other politely during team meetings, but their interaction was minimal. When Jack missed a meeting, Brooks tended to be more vocal and involved. This conflict never emerged into the open; only at the end of the first year did both Jack and Brooks acknowledge it. Both believed that by working together they had overcome what might have been a problem in the group. Jack noted that Brooks was,

> ... not one of my favorite people and I am not one of her favorite people. But ... it didn't interfere with what we did in the course. And as time went on I ... found that I get along much better with Brooks to the point of I didn't even consider that we were that many miles apart.
>
> (Interview, 12/82)

Brooks, too, pointed out that she thought they had "pretty much resolved any differences by the end of last year" (Interview, 12/82).

In phase four, Elliot and Ted's questioning of the team's project created conflict, as described previously. Again, neither openly challenged the group: Elliot asked questions which suggested his feelings and Ted became more withdrawn. Both noted that they did not directly challenge the group or insist on their own point of view because they did not want to interfere with group solidarity. Ted said he did not want to be an "obstructionist," setting one team member against others, and Elliot said,

> I guess whenever I have any misgivings about the direction I mention it, usually after I have thought about it and written in the log, and then I will mention it at a group session. ... I am only one person and I like to be flexible, that's all ... to go with the flow.
>
> (Interview, 12/82)

Elliot's behavior and team members's support of him allowed the team to avoid open conflict. Brooks' conflict with Ted arose because of his unwillingness to assume tasks rather than his questioning of the research topic. For Brooks and others, task assumption represented being a part of the group. (John felt he became a true member of the group only after he began to work on the school history.) If Ted did not accept this responsibility, he threatened group cohesion as well as the project outcome which depended on team member cooperation. Brooks challenged Ted on these issues, and his subsequent task assumption, although still less than that of others, allowed the team to avoid further overt conflict with him. The team did not experience a conflict when, in phase five, Ted openly raised his concerns about the project. They had gone too far on this project to turn back, so argument seemed useless, and, as suggested, they had dismissed Ted's point of view as idiosyncratic and of little use to the team.

Interactions between John and Elliot in year two provide a final illustration of avoided conflict. John believed that the research carried out by the team in year one, primarily the Staff Opinion Survey, had been used by the principal in making decisions about organizational changes in the school (department chairpeople, homogeneous grouping in math and English). Elliot believed that the principal had implemented changes without considering the team's work and that the most important change in the school in year two was actually the principal starting his first full year. During phase four, both John and Elliot expressed their opinions, but neither ever challenged the other on their different perceptions of the school and the project's impact on it. In phase five, as the team began to summarize the project in its final report, John and Elliot debated this issue. Elliot suggested that they re-interview the principal, asking him whether or not the team's work had influenced his decisions. (The university researcher agreed to conduct this interview and found that the principal had considered the team's survey results but would have made the decisions he made with or without the team's work.) John and Elliot may have experienced this conflict as a disagreement over school context issues, an arguement similar to those which arose in phase one. It never became a serious conflict because each tolerated the other's opinion and because neither appeared to see the issue as crucial to the project. Their interaction illustrates, however, team members' ability to have different perceptions of the project and its relation to the school and to continue to work together toward a common goal.

Throughout the two year project, team members therefore avoided overt conflict and emphasized group commitment and solidarity. Although this emphasis allowed them to complete the project and emerge from the experience with positive feelings about the group process, it may also have contributed to the inapplicability of the project oucome to the school setting. Had Ted or Elliot been less concerned with group cooperation and more vocal about their concern for the project's impact on the school, the group may have experienced more overt conflict. It may also, however, have carried out a project that had more of an effect on the school, although some school context factors would have continued to limit the team's influence. Because the group chose to minimize conflict they could not experience the full benefits of having a diverse membership - one of the expected advantages of collaborative action research. Their emphasis on group cohesion did, however, allow them to complete the project within the given two year time period and provided a group experience valued by team members as an end in itself.

Decision making

Immediately following the conflict between Jack and the university researcher in phase two, Ted suggested that the team establish a policy for decision making, a mechanism that would allow the group to avoid conflicts over decisions such as when to meet. Other team members disagreed with Ted's proposal, believing that decisions would be made when needed in appropriate ways. They chose not to establish an explicit norm for decision making, realizing perhaps that they had disregarded other explicitly set rules and that different situations required different decision making processes. As a result, decisions were made in a variety of ways:

> Jack: How were decisions made? About by any means that you could make them. Decisions were made sometimes unilaterally. I'm not saying they were done intentionally but for the sake of movement. ... There were other times we had give and take in discussions and negotiated ... and then there were other times that the group really didn't have any decision to make - we were led to go in a certain direction because it fit the guidelines of the federal program.
> (Interview, 12/82)

Despite their unwillingness to establish a single method for making decisions, the team's patterns of decision making reflected their desire to avoid conflicts. Previous research in group dynamics suggests that groups tend to develop patterns of decision making which parallel other interactive patterns in the group, such as conflict resolution or leadership patterns. In a group with a strong, dominant leader, for example, unilateral decisions prevail. A democratic group leader emphasizes polling or voting, and a facilitative leader promotes decision making through consensus (Schein, 1969). Because leadership patterns in this group changed in relation to task demands and individual assumption of the leadership role, and because the team chose not to establish a rule governing the process, the team experienced several types of decision making. In most cases, the way in which decisions were made and the decisions themselves helped team members reduce the possibility of conflict.

One pattern in decision making was the team's tendency to postpone decisions. Several team members noted their reluctance to act until internal or external pressure forced them to do so:

> Ted: I think we just talk and talk and then when a deadline comes we finally make a decision.
> (Interview, 12/82)
>
> John: I think it's mostly a pressure situation. When the decision has to get made it gets made.
> (Interview, 12/82)

Team members postponed decisions about research design and question in phase three, replacing Jack and visiting other schools during phase four, and presenting at the University of New Hampshire faculty colloquium in phase five. In each of these examples, agreement to postpone the decision usually followed a discussion in which team members were unsure of their own opinions or disagreed with the opinions of others. Postponing allowed them to formulate their own views, to talk informally with other team members outside of team meetings, and to avoid conflicts which might have arisen had the issue been pushed to a decision at that point. When the team was ready to make decisions, it used one of three processes: unilateral decision making, polling, or consensus. Each of these processes is described below.

As Jack suggested, individual team members occasionally made unilateral decisions for the team. A team member usually used this form of decision making either because he or she had strong feelings about an issue or because the decision had to be made quickly so the team could move on. A unilateral decision differed from a decision which emerged from discussion primarily in that other team members did not challenge or comment on the individual's choice of action. Early in phase one, for example, some team members suggested shifting meetings from Wednesdays to Fridays. Jack said, "No," and the issue was dropped. Later in the project, when discussing a statement to be given to teachers with the MBI and School Survey, John made several unilateral decisions about what teachers in the school should and should not be told. Like Jack, John simply said "no" as a way of making these decisions or stated a strong opinion which went unchallenged. In an interview, John noted that unilateral decisions occurred when a decision was needed immediately and when the person deciding seemed to have some knowledge or understanding of what should be done: "One person sometimes ... might say, 'Hold it folks, we have to have a decision on this ... we should do it this way because of this'" (Inerview, 12/82). Other team members were then willing to abide by that decision.

Occasionally the team made decisions through polling. This form of decision making appeared most frequently when the group made major decisions affecting either the group process or research project. When deciding whether or not to replace Jack on the team, for example, each team member stated his or her opinion before agreeing not to add a new person to the group. During the meeting at which Brooks argued for an evaluation study of teacher morale, the university researcher asked first John and then Ted what they thought of Brooks' proposal. At the following meeting, Brooks polled Elliot and Jack for their opinions. Polling allowed the group to agree to work together on the issue of teacher morale. Even though Elliot, Ted, and probably Jack would have preferred not to focus on this issue, they did not use the decision making process of polling as an opportunity to disagree. Instead, they chose to avoid conflict and to profess agreement in order to move forward on the task as a unified team. This decision led to Elliot's and Ted's later questioning of the group's project. Polling, in this case, provided the team with temporary unanimity which allowed them to progress, but was not used by team members to state their actual opinions because they did not want to be "obstructionists' or cause group conflict.

The team made most decisions through a somewhat amorphous process of consensus. When an issue requiring a decision was raised, team members discussed it, sometimes stating opinions, sometimes predicting consequences or outcomes of one decision or another, and sometimes moving on to unrelated tangents. Eventually, one team member usually stated the decision which had emerged, either explicitly or as the final comment of the discussion which stood for the consensus of the group. For example, the team had a fifteen minute discussion about whether or not to include their interview with the school principal in their research proposal. John summarized the sense of the group which emerged, saying that he thought it was all right to include it and would get the principal's permission to do so (Documentation, 5/19/82). At a meeting in December, 1982, the university researcher asked if the team would meet next week. John said he would work on his timeline of the project; Elliot said he could work on the computers. John began to state the group's decision in the form of an opinion: "I think we shouldn't meet next week but use the time to get caught up on everything." Brooks ended the discussion saying she thought it would be good to have the time to catch up. Through a process of building on each other's opinions, team members arrived at stated or unstated decisions which represented the general consensus of the group.

The team's decision making processes reflected their desire to keep moving forward on their task as a unified, cohesive group. If the decision was unclear or involved possible conflict, team members tended to postpone it. If one team member had strong feelings or greater understanding of an issue, he or she could make a unilateral decision which the team would accept. The team occasionally used polling to elicit unanimity on important decisions. Team members rarely disagreed when polled but instead followed the lead of those with stronger opinions. This allowed them to avoid overt conflict but in at least one case created problems later in the group process. Most frequently the team arrived at decisions through discussion leading to consensus. Consensus did not always mean unanimity but was a process which allowed team members to state their opinions and come to a sense of the group's preference. This process contributed to team members' perceptions of the group as cohesive and of their group interaction as a process based on openess, commitment, and equality.

Summary

The patterns which emerged in the team's group process resulted from the demands of the research project and process and the expectations, needs, and values brought to the task by each team member. The group experienced five phases of development, each characterized by specific interpersonal and task issues which required attention. Within each phase, individuals fulfilled different roles, assuming positions of leadership when their skills, knowledge, self confidence, and understanding allowed them to do so. They also established patterns of mutual support or pairing which provided interpersonal and task support and contributed to task completion. The university researcher, although she facilitated team processes throughout the project, also changed roles in accordance with team members' needs and expectations and the demands of the research project. In general, team members tried to avoid conflicting situations and established decision making patterns which reflected their desire to maintain a cohesive, cooperative group.

The group processes described in this report provided team members with a positive group experience and contributed to their valuing of the process of collaborative action research. The same processes also influenced the research project. Particular patterns, such as an individual's assumption of leadership when his or interests and skills prevailed or the desire to work on research tasks as a group, affected the team's choice of research topic, data collection tools, methods of analysis, and the form of the final report. More generally, the team's emphasis on consensus and cooperation may have been one factor which hindered its initial attempts to carry out a project more directly related to school practice. Just as the research project influenced some of the group processes which emerged, so did the group process affect the team's project and outcomes.

PART III

COLLABORATIVE ACTION RESEARCH ON CHANGE IN SCHOOLS: SOME CONCLUSIONS RELATING ARCS TO PREVIOUS STUDIES

Previous studies of action research have emphasized the importance of collaboration and defined the general framework or requirements of the collaborative process. These studies claim that effective collaboration requires frequent and open communication, adequate time and resources, facilitative leadership, and a commitment to the concept of parity: each individual contributing his or her unique insight and skill to the group's project (Little, 1981; Tikunoff, Ward, and Griffin, 1979; Wallat et al, 1981). Despite their emphasis on collaboration, none of these studies have analysed the collaborative process actually experienced by an action research team or described what form these requirements took when assumed by teachers and university researchers collaborating on a school-based project.

In examining the data collected about the action research team in this study, I found that their collaborative process was much more complex than the implementation of a set of requirements. It was a dynamic process which included the research project the group implemented, the context within which they worked, and the patterns of interaction they established in order to carry out necessary tasks and meet individual needs. The interaction of these elements - research project and process, school context, and group process - created an experience which teacher participants found both personally and professionally satisfying.

One difficulty in describing the group's collaborative process is the mutually reinforcing nature of its elements. The research project and process were influenced by the school context and at times directed by interactions in the group process. For example, when the school principal began to impose changes in areas which the team had planned to investigate, the team had to shift to another research topic. And when Brooks began to assume a leadership role because of her understanding of research, she also directed the group's choice of project. The group process depended in part on team members' roles in the school context and their perceptions of the school's impact on the group. Thus Jack, given his status as part time administrator, could assume initial leadership in the group, and John could help team members see that their work was valuable despite its lack of direct impact on the school. At times the research project contributed to or impeded certain patterns in the group process, causing conflict or pairing between group members and determining the team's changing use of team time. Thus a description of any one element of the collaborative process must necessarily include an explanation of the other contributing factors.

Another difficulty in trying to capture a group's collaborative process is that the process changes over time. As the project moves forward, research tasks change, demanding different forms of interaction, different roles, and different patterns of behavior. As team members work through interpersonal or group process issues, their understanding and perceptions of the project change, they interact differently, and they approach their research tasks in new ways. The team's collaborative process is not a single static set of behaviors around a monolithic project but a series of dynamic patterns which respond to changes in both interpersonal group relations and research task.

Characteristics of Collaborative Action Research: A Re-examination

The description and analysis of the collaborative process of an action research team presented in this study can be used to re-examine the characteristics of collaborative action research defined by previous studies. These characteristics can be grouped into three categories (see Appendix A for further explanation of the characteristics of action research):

1) participation in the research process; teacher and researcher roles;

2) staff (practitioner) development; and

3) conditions or requirements for successful collaborative action research.

A re-examination of these categories provides a way of placing this study within the broader framework of collaborative action research. At the same time, the ARCS study illustrates the applicability of these theoretical expectations to a particular action research project and clarifies the factors which influence expected outcomes.

1. Participation in the research project: teacher and researcher roles.

In this project, teachers and university researchers on both teams participated in all phases of the research, from identifying a researchable problem to writing the final report. Team members felt that parity was achieved: teachers and university researchers contributed their particular skills and insights to the project. As Wallet et al (1981) suggest, parity does not mean equal responsibility at all points in the project, but implies that team members assume responsibility when they have the appropriate skills and knowledge to do so. The shifts in roles and leadership experienced by the members of this action research team illustrate the concept of parity.

Communication, openness, and trust between teachers and university researchers never arose as problems in these groups, although some teachers did have to work through concerns of confidentiality and trust among themselves. They implicitly negotiated these issues through conversations and shared tasks during team meetings, never raising them as concerns the entire team should address. Teachers did experience some initial frustration and confusion with the non-directive leadership role assumed by the university researchers on both teams. The only open challenge to this role came from Jack, who may have been trying to test the university researcher's non-directive role in the conflict in phase two over when to meet. Aside from this confrontation and occasional comments about the need for more direction voiced during interviews, teachers again worked through this issue without directly discussing their concern. By the end of the project, teachers felt that the university researcher had assumed the best possible role, one which led to teachers' development as researchers and to their feelings of owning and valuing the research project and experience. For these teams, open communication was not necessarily the key to positive interaction between teachers and researchers. Frequent and regular meetings allowed the teams to create a process through which group members could learn about and accept one anothers' roles and positions without necessarily directly addressing their concerns.

The participation of both teachers and researchers on a collaborative action research team is expected to lead to a connection between theory and practice. Through this connection, theory can be enriched and practice improved. This action research team carried out a project which, although it may contribute to theoretical understanding of the relation between school organization and teacher morale, has had little or no immediate impact on school practice. This contrasts with other recent action research projects in which the outcomes tended toward changed practice rather than the development of theory (Florio, 1983; Kemmis, 1980; Lieberman, 1983).

There are several reasons for the unusual outcome of this project. First, most other recent action research teams have focused their investigations on specific curricula or teacher behaviors over which they had some control. In New York, for example, the three teams in the Interactive Research and Development on Schools project (Lieberman, 1983) studied a writing curriculum, teacher interventions with disruptive children, and qualities of teachers which lead to positive work attitudes. Florio (1983) found that teachers in her action research group, the Written Literacy Forum, were more concerned with using the research to produce classroom materials for their colleagues than with analysing collected data to arrive at theoretical generalizations about the writing process.

In the project described in this study, teachers focused on a school-based problem beyond their immediate realm of control. Perhaps because of the title of the project, Action Research on Change in Schools, and the emphasis on a group project, these teachers first chose to investigate scheduling and then shifted to an examination of the effects of school changes on teacher morale. In order to change practice in either of these areas, teachers would have had to restructure elements of the entire school organization. Teachers lacked the power to do this and the willingness to challenge given domains of responsiblity in the school. They were therefore unable to have an immediate impact on school practice. Instead, they concentrated on producing research which would be acceptable to others in the research community and which contributed to an understanding of factors contributing to teacher morale. Because they taught in the school in which they conducted the study, their work fulfilled the expectation that collaborative action research leads to theory which is grounded in the complexitites of the teaching and learning environment. Because of their choice of research topic and existing barriers in the school context, however, they were unable to use the project as a way of immediately changing or improving school practice.

Although collaborative action research continues to strive toward the generation of both theoretical understanding and improved practice through the participation of university researchers and practitioners, it continues to produce either one or the other. Corey (1953) suggested that immediate school change took precedent over generalizable theory; Kemmis (1980) noted that 'theoretical payoff" took the form of more critical and knowledgeable practitioners rather than contributions to educational theory. The closer look at the New Hampshire team's action research project presented in this study indicates that the action research group's choice of topic, school context, project guidelines, and group interaction all contribute to the direction of the research and its final outcome.

Given the understanding that collaborative action research may not contribute to both theory and practice, the pursuit of both within a single project still seems to be a worthwhile endeavor. If action research leads to improved practice, as it did in the Interactive Research and Development on Schools projects and in the Written Literacy Forum, it is improved practice based on an investigation of a number of issues and alternatives. As Lewin (1948) suggested, teachers seem to be more willing to accept these changes in practice because they have participated in a study which illustrates the need for change. If action research contributes to theoretical understanding in the field of education, as it has in the project in this study, it appears to produce theory based on the reality of school practice. Although the outcomes of collaborative action research projects tend to emphasize either theory or practice, the theory or practice produced seem to be valuable because of the process undertaken in the attempt to address both. Participants in action research projects claim that they value the process itself regardless of the tendency toward either theoretical or practical results.

2. Staff development

Previous work in collaborative action research proposes that teacher participation can lead to improved practice among project participants (Hall, 1975; Elliot, 1977); teachers' professional growth (Mosher, 1974; Pine, 1981); and greater school staff colleagiality and experimentation (Little, 1981). In this project, individuals' improved practice appeared as a by-product rather than as a direct result of participation in the project. Only John and Brooks described any change in their classroom teaching, and in both cases the changes arose out of new feelings about themselves as people and professionals. The project did seem to provide the opportunity, time, and support for these teachers to explore and examine their practice, but the changes which occurred appeared to be indirect rather than immediately apparent in classroom practice.

Teachers in this project experienced a great deal of personal and professional growth. They emphasize that this growth resulted from participation in the process of collaborative action research which became a more valuable outcome than their research project. Their stress on the value of this process and its contribution to teacher growth reflects the perceptions of teachers involved in other action research projects. Teachers participating in the Ford Teaching Project (Elliott, 1977) said that the value of their project lay as much in the opportunity to come together and examine practice as it did in the research product. A teacher involved in Florio's (1983) Written Literacy Forum said, "I wonder if it's not so much what we found out but the whole process we went through (that was important). For people to accept what we found out, they have to go through the process, too" (p. 10). Teachers on both the Michigan and New Hampshire teams noted that the research process emerged as the most important and meaningful aspect of the project. One Michigan teacher said, "I think being introduced to action research as a process has been the most valuable part of the project for me. ... I think if more people sat down and went through the process the way we did, they would recognize the fact that there isn't always a black and white for everything that you deal with and that there are reasons why things are done the way they're done" (Interview, 1983).

For teachers in the project presented in this study, the collaborative action research process contributed to confidence in their own ability to identify, confront, and solve classroom and school based problems. Through participation they became more familiar with research language, methodology, and design, a familiarity which seems to have made them better consumers of educational research whether or not they chose to pursue other research projects. Some teachers in the project have suggested that they would like to use their new confidence, skills, and understanding to carry out other action research projects, write about their experience as researchers, and present papers about action research at local and national conferences.

The New Hampshire team's emphasis on personal and professional growth appears to have resulted not only from their positive experience in the process of action research but also from their inability to carry out a project which affected school practice. Teachers on the Michigan team were in the same position; they, too, focused on a school based issue and questioned the impact of their recommendations on school practice.

They noted, however, that regardless of the principal's use of their work, they had all benefited from their involvement in the group's research process. The experience of teachers in the Written Literacy Forum or the Ford Teaching Project indicates that teachers also value the process when their project has an impact on practice. Thus the process of collaborative action research appears to be a useful and valuable form of staff development whether the product is improved practice or educational theory.

The expectation that collaborative action research leads to professional development may, however, require further investigation. Although teachers themselves note that they have changed and foresee future projects or actions which build on newly acquired competencies, no longitudinal studies exist which investigate the actual use of new skills or the permanence of change in self perception or behavior which result from participation in an action research project. Although we can say that teachers involved in this and other collaborative action research projects experienced positive professional growth, further study is needed to document the longevity of that growth as well as the forms it takes over time.

Collaborative action research is also expected to benefit the school or system within which it occurs. The immediate impact of the New Hampshire team's research findings on the school appear, however, to be minimal. Because of the insularity of the research team from the rest of the school and the principal's control over school processes, it also seems unlikely that action research will be used as model for problem solving in the school. In one case, John suggested to the principal that he (John) form a committee to solve the problem of inconsistent use of hall passes in the school. The principal agreed, and John carried out what he called an "action inquiry" process to address this problem. Although precedent has been set to use the collaborative process to promote collegiality and to solve problems, further use depends on team members' willingness to initiate the process and the principal's willingness to accept, initiate, and legitimize it as a method for solving school problems or making school decisions. Thus, collaborative action research will not automatically benefit the school in which it takes place. If left as a process used by a small group of teachers in the school, collaborative action research will probably have little impact on patterns of collegiality, communication, and experimentation in a school. If adopted by a school as a way of addressing school issues, the process could produce positive staff interaction which contributes to the solution of school based problems.

3. Conditions necessary for collaborative action research

Previous studies have suggested that successful collaborative action research requires teacher participants who are confident, willing to share and experiment with ideas and concerns, and have some background in research (Hall and Hord, 1977; McLaughlin and Marsh, 1978; Rainey, 1973). This study shows that while these

these attributes and skills through their participation. Only one teacher on this team felt skilled in research when the project began; by the end of the two years, the other teachers had become familiar with research methodology and had, in some cases, developed a sense of expertise in their area of research. Through participation in the project, teachers also experienced increased confidence in themselves as teachers and professionals. By the end of the project, teachers expressed a greater willingness to communicate their concerns and experiment with solutions. They attributed this openness to their better understanding of school issues and their growing belief in their own ability to address the problems which arose. The teachers involved in this project were diverse in their expectations, skills, understanding, and needs brought to the team. Each contributed to the research project and group process in ways consistent with their individual backgrounds. The "required" characteristics for teacher participants in collaborative action research therefore appear to be less important than the willingness to become involved in the research process. Involvement itself can lead to attributes and skills which allow collaborative action research to succeed.

Another set of requirements for collaborative action research is project organization, which includes jointly defined goals and strong leadership. Several previous studies suggest that the group should negotiate and state clear and specific goals early in the project (Hord, 1981; McLaughlin and Marsh, 1978; Wallat et al, 1981). In this project, the university researcher, as group convener, explained that the team's overall goal was to carry out a research project on a school-based problem which the teachers would identify. She left more specific discussion and goal setting to the team. The team then spent almost the entire first year of its project defining, changing, clarifying, and limiting its goals. It continued to carry out other research processes such as data collection during this time, but only in May, 1982, did it arrive at clearly articulated goals which could be used to plan future actions. Team members explain that although the process of goal clarification was frustrating at times, it was probably necessary in that it allowed them to develop ownership and understanding of the project. This team's experience suggests that although the joint definition of goals is an important aspect of the process of collaborative action research, it may require more than a few meetings to accomplish. In fact, mutual clarification and acceptance of goals appears to be a major task for a collaborative action research team, one which demands and merits a considerable amount of the team's attention and time.

Although previous studies indicate a need for strong but facilitative leadership in collaborative action research, few explain what forms such leadership might take. This study illustrates that the concept of parity contributes to the assumption of leadership by various group members who feel they have the confidence, skills, and knowledge needed by the team at a particular time in the research process. This model of leadership in collaborative action research has not been examined in earlier work, primarily because of the expectation that the university researcher would provide group leadership. On this team, the university researcher provided facilitative leadership throughout the two year project. She ran most team meetings, served as research authority, and, when necessary, directed the research task. She also returned decisions and authority over group processes and research tasks back to the team whenever possible. Other team members also provided task and process leadership, influencing the direction and content of the group's project as well as its interactive processes. Leadership in the group could be seen, as Hord (1981) suggests, as the result of the university researcher dispersing her power and allowing others to share control and responsibility. The description and analysis of this group's processes, however, indicate that leadership assumption resulted from patterns of interaction which included but were not limited to the role assumed by the university researcher on the team.

Finally, many of those studying collaborative action research indicate that the school climate affects teacher willingness to become involved in action research and their ability to carry out a successful action research project. This study provides a different perspective on this issue. During the first few meetings all five teachers on the team described the school as lacking in communication and collegiality, closed to experimentation, and extremely hierarchical in policy and decision making. These characteristics would be expected to inhibit teacher participation in an action research project. Instead, several teachers explained that they had joined the team with the hope of changing these aspects of the school environment, and the team ultimately ended up researching one element of the school climate. If the impetus for an action research project comes from outside of the school, teacher willingness to participate may therefore depend less on the existing school environment than previous studies have claimed. Participation may actually be seen as an opportunity to have some impact on elements of the school climate which teachers dislike.

This study does suggest, however, that existing school structure can affect the outcomes of a collaborative action research project, if outcomes are perceived as change in school practice. Whitford (1983) points out that "change is affected by the degree to which planners and initiators of change are integrated into the line authority structure of the organization" (p. 7). Teachers on the New Hampshire team worked increasingly independently of the organizational hierarchy of the school and system. Despite attempts to inform the principal and the assistant superintendent of their progress, the team never became a part of the school or system decision making structure. The research project they chose reflected their perceived lack of authority in the school and served to steer them further away from having a direct influence on school practice. Even the Michigan team, which worked on specific scheduling issues and made clear recommendations to the principal, believed they would probably team, which worked on specific scheduling issues and made clear recommendations to the principal, believed they would probably have little impact on school practice because they lacked a position in the authority structure of the school. One Michigan teacher said:

> I think the principal is pleased that we were involved in the process, that we were able to meet as we did, that she was able to see how the action research process is a valuable tool for staff devleopment, but again, I don't think it's going to impact much on the schedule that they're going to build for the following year.

In projects which investigate school-based rather than classroom-based practice, then, school climate, administrative structure and support, and teacher willingness to challenge existing patterns of responsibility and authority will influence the possible change in school practice which results from a collaborative action research project.

This study has also suggested, however, that the success of a collaborative action research project entails more than change in practice. Researchers writing about collaborative action research and the conditions required for its success base their assumptions on the belief that collaborative action research outcomes will include generalizable theory, improved practice, and staff development. This project and others illustrate the difficulty in achieving all three goals with equal success. A research team's emphasis and outcomes may depend on the interests, skills, and needs of participants; the project structure (initiator, choice of group versus individual projects); the choice of research topic; the relationship of the team to the authority structure in the school or system; and the processes of interaction which emerge in the group. The integration of these elements may lead to a collaborative action research project which succeeds in meeting one or two of the expected goals, but not all three. In this project, for example, the team produced valid educational theory on the subject of teacher morale and provided a valuable professional development experience for its teacher participants. It did not have an immediate or direct effect on school practice in the areas of scheduling or teacher morale, and it may have little impact as a model for effective problem solving in the school. To call this project unsuccessful because it did not change school practice would minimize the value of the goals the team did reach. As I have suggested, it appears to be worthwhile to pursue all three aims of collaborative action research. Action researchers must understand, however, that context specific factors may lead to successful completion of one or two, if not all three, expected outcomes.

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The Michigan Team:
A Summary of Research and Group Processes

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Research Chronology: Year Two

From September through December 1982, the Michigan teachers constructed and administered a parent survey, interviewed 16 teachers to follow up on areas of ambiguity identified in the teacher survey which had been administered in the spring, and analyzed the results of the three essay questions taken from the pupil survey. The team also participated in The National Staff Development Council convention in Detroit.

January through March 1983, the teachers analyzed and compiled the results of the parent survey which had been administered in the fall. They also wrote up teacher interviews and began to examine the data they had collected for implications and recommendations regarding school changes and changes in the scheduling process.

April through June, the teachers continued to analyze the data. There was extensive debate and discussion about the recommendations which could be based on the findings coming out of the research. Time was given to discussion and planning of strategies to present and implement findings. In early June a meeting was held with the principal and the counselor to discuss the study and its recommendations. The principal proved to be very positive about implementing the findings.

From January through June the team was actively involved in dissemination of findings about the process of collaborative action research. In January, Jim, Lori, and Anne presented the team's work to the Research Seminar in Teacher Education at Michigan State. In March, Lori and Jim made a presentation to the Educational Forum of the College of Education at Western Michigan University on the Collaborative Action Research Model.

In March, the entire team presented the process and accomplishments of their collaborative action research to their school board, and in April, Lori and Jim presented at the AERA Convention in Montreal. In May, Lori and Florence made a presentation at the Oakland County Chapter of Phi Delta Kappa, dealing with the collaborative action research process.

It should be noted that these were significant dissemination efforts and required considerable time in terms of planning and travel. The dissemination focused primarily on the process of collaborative action research and deflected some time and energy away from the team's process of inquiry during the period January through May. Concurrently conducting research and disseminating it reminds one of the saying "You cannot serve two masters at the same time."

During the month of June the team became very much involved in questions of the implementation of findings, recommendations, and the preparation of the final draft of the report. At this point now, in August, the team has planned meetings for late August and early September, to make presentations to the school board, the superintendent, and the teaching staff. A planning meeting has been scheduled for August 29, 1983 to finalize strategies for presenting the research findings and recomendations to maximize their implementation.

It should also be noted that Anne and Florence have been appointed by the principal of the school to develop and implement an in-service program to replicate the collaborative action research process through other studies and staff development activities in the school during the coming year. Anne and Florence have been charged with the responsibility to describe the process and to give teachers at their middle school an opportunity to develop research and process skills and to participate in an action research project of their own choosing. Perhaps this is one of the most significant outcomes to emanate from the project at the Michigan site.

The Group Process

The description of team member roles, researcher role, and conflicts on the Michigan ARCS team is based on some documentation of their team meetings during the two years of the project. It also rests heavily on final interviews conducted with Michigan team members by the Michigan university researcher. The data used here is, therefore, less direct and much more sparse than that used to generate the in-depth descriptions of the New Hampshire ARCS team found in Report X, Appendix C. As a result, the descriptions presented here of the Michigan team are less detailed and more tentative than those of the New Hampshire team.

Roles

As in New Hampshire, teachers on the Michigan ARCS team described their group process as one in which all team members worked together and shared responsibility. Especially in Year 2 they tended to de-emphasize individual roles and describe instead how team members all contributed to the research project. Within this overall sense of a unified purpose and process, each individual assumed and was recognized for having taken on certain roles.

Lori and Jim, for example, were attributed with group leadership by other team members during both years of the project. Their leadership, like Jack's in New Hampshire, depended in part on their greater familiarity with school policies and issues which resulted from their part-time administrative (staff development) responsibilities. It may have also resulted from the interest both voiced in using project participation as one means for their own professional advancement. Because both hoped the project would help their own careers as well as the school, both invested a great deal of time and energy in the team's work.

In Year 1, Lori described herself as a team leader, someone who would get the team working on specific tasks. She explains some of her assumption of the team's work by saying she felt she had to do everything because as part-time staff developer she didn't have all of the classroom responsibilities other team members faced. In Year 2 she described herself as "spread too thin," trying to do too many things and not doing any of them as well as she would have liked. As a result, she had less of the feeling that she had to do all of the group's work. At the same time, however, perhaps because she no longer controlled and directed the project as much, she felt the group was less cooperative in Year 2. She also found it more difficult to pull all of the pieces of the project together toward the end and noted her concern that, like other aspects of her work this year, the team's final product would not be as good as she had hoped.

Jim, too, described himself as a group leader, a role he said he shared with Lori. He saw his leadership as keeping the group on task and on schedule, and he noted that others seemed to see him generating new ideas for group examination. Thus, Jim seemed to assume process leadership and Lori task leadership for the team, although their responsibilities and actions did overlap. Jim and Lori, as team leaders, did most of the team's presentations (e.g., to AERA, Michigan State). Jim noted that he enjoyed this aspect of the role: sharing the team's ideas with others in situations which made him "feel more professional." Like Brooks and Elliot, Jim had positive feelings about joining a community of educational researchers and professionals outside of the school environment.

Anne describes herself as entering the team as someone "who always agreed with people." During team meetings in the first six months of the project Anne tended to be very supportive of others, encouraging their participation and building on the ideas others brought to the group. Anne herself noted a shift in her behavior and participation in Year 2. She became more confident, believing that she had valuable ideas to contribute to the research project and as a result, initiating new topics and tasks. Other team members agreed that Anne became more active in Year 2, assuming some of the leadership Lori had relinquished and providing the team with the impetus and energy to carry through the research task.

Florence's role remained fairly constant through the two years of the project, a role she jokingly referred to as "elder statesman." In some ways, Florence paralleled Ted in New Hampshire, in that she was less involved in the ideas behind the project and planning the research design. She, like Ted, often raised unrelated tangents during team meetings which she enjoyed discussing. Florence differed significantly from Ted, however, in that she carried out many key group tasks for the team such as drafting surveys or collating and analyzing collected data. She also brought writing and editing skills to the team which were especially useful in producing a final report. While other team members saw Florence as somewhat removed from the team at times, they also described her as a scholar, a worker, someone willing to do a task that needed doing.

Although Jane only participated in the project during the first year, she seemed to play a key role on the team that was missed by other team members when she left. As a former elementary school teacher and the one team member unfamiliar with the other four teachers in the group, Jane felt that she differed from the rest of the team. Her emphasis on the needs of students represented a point of view not stressed by other team members, and her questions provoked many team discussions of the school context and the team's goals. Other team members describe Jane in retrospect as a "devil's advocate," someone who was always "up front, no pretense," and someone who was "always swimming upstream." Although the group may have been more homogeneous and therefore more comfortable in Year 2, they also seemed to miss Jane's insights and questioning which frequently helped them focus on and reach some understanding of complex issues.

Researcher Role

The Michigan university researcher assumed a fairly constant facilitative role throughout the two years of the project. Michigan team members describe him as having gotten the team started by asking questions, clarifying and summarizing their ideas during team meetings, and keeping the team on track. Jim noted that the Michigan researcher "gave expertise, not direction," and Anne ponted out (as did several New Hampshire team members) that the university researcher's facilitative style allowed teachers to control the project. She said that he helped "get things moving and then . . . (stepped) back and (watched) a little bit more and let us take over and try and work things through. Which is good - it gave us more ownership, you know, more of a feeling that we were doing."

In their final interviews with the university researcher and in conversations with members of the New Hampshire team, at least two Michigan teachers indicated that they would have liked more guidance, assurance, and direction in the form of timelines and deadlines from the university researcher. Again, this parallels needs expressed by some of the New Hampshire teachers and suggests that although teachers recognize the value of controlling and thus "owning" their project, some also want a certain amount of direction and not just facilitation from the university researcher. In Michigan, the university researcher rarely if ever assumed the more directive role taken on by the New Hampshire university researcher in modeling or carrying out research tasks in Year 2.

Conflict

As in New Hampshire, overt conflict on the Michigan team tended to be unusual. In Year 1, Jane's presence on the team and some of her ideas generated some discomfort among team members, a discomfort which at one point several thought of addressing openly. They ultimately chose not to and the immediate tension dissipated. As suggested, although Jane may have created some arguments or disagreements on the team, her presence was missed in Year 2 as the team lacked the alternative viewpoints she offered. Perhaps other team members recognized the value of this kind of conflict in generating productive ideas.

In Year 2, a more explicit conflict emerged between Jim and Lori over a number of project issues. Lori, for example, wanted to examine the school schedule and make specific recommendations for alternatives. Jim argued against focusing on the school's schedule and suggested the group concentrate on making more general recommendations based on the data they had gathered. Lori said she thought Jim's goal was a project which other schools could "pick up and use," while hers was to produce a project which benefited their school. This conflict in aims led to several discussions during Year 2 about what the team should do with collected data and what form their final report and recommendations should take.

While documentation suggests that Lori tended to back down after a certain point in these arguments, she and Jim describe the process in different ways. Lori saw a clear difference in their goals. She also felt that at times, "if I was going to say black, Jim would say white, just to say white." She said in her final interview that she generally backed down when they disagreed, thinking maybe she was wrong or "maybe right but I'll let you have it." Jim seemed to describe the conflict as less serious than Lori, saying that the issues discussed were "never black and white" but gray areas. He said that they would discuss the issues and one of them would give in to the other. Anne, too, saw these arguments as productive, a way of hashing out ideas and solving problems. The conflict between Jim and Lori may have been useful for the research task, but it did seem to be a negative experience for Lori, one which may have also contributed to her feelings of being out of control in Year 2 and her sense that the team was less productive. While Anne saw the conflict as a positive element of the group process, Lori felt it as negative, at least personally. Her acquiesence to Jim on the issues discussed led the team to pursue his more general goal of recommendations based on collected data rather than Lori's aims of specific alternative schedules.

A final conflict, not overtly raised in team meetings, arose in Year 2 between Lori and Florence. Florence was required in Year 2 to take part in a staff development program in which she had no interest. She resented the imposition of the program and the message such forced participation gave to teachers. Lori, as the school's staff developer, was responsible for implementing the program to which Florence objected. Florence openly said that she did not want to discuss the issue whenever the staff development program was raised, so it never became an openly discussed problem. But Lori felt that Florence in some way "felt at odds" with her as a result of their positions outside of the team, and she believed that Florence withdrew somewhat from the team because of her general anger about the staff development program. Florence continued to carry out team tasks in Year 2, but it appears possible that her feleings did affect the team's interpersonal interaction in Year 2, just as the conflicts between Lori and Jim seemed to do.

APPENDIX D

TEAM REPORTS

Team Research Proposals

ARCS Report V

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-535-

ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT V

ARCS TEAM RESEARCH PROPOSALS ON SCHEDULING

Sharon N. Oja
Gerald J. Pine

Principal Investigators

ARCS is an activity of the University of New Hampshire and supported by the National Institute of Education, Department of Education, under Grant #G-81-0040. The opinions expressed in this publication do not necessarily reflect the position or policy of NIE and no official endorsement by NIE should be inferred.

ARCS TEAM RESEARCH PROPOSALS ON SCHEDULING

Action Research on Change in Schools (ARCS) is a two year NIE funded collaborative action research project (1981-1983) currently being carried out in New Hampshire and Michigan. Through this project, teachers from two junior high/middle schools and university researchers from the University of New Hampshire and Oakland University have met regularly in two action research teams to identify and study a researchable problem in their schools. Review of the results of the Far West Laboratory Study of the Interactive Research and Development on Teaching Study (IR&DT) (Tikunoff, Ward, & Griffin, 1979) and the interim reports from the Interactive Research and Development on Schooling (IR&DS) (Griffin & Lieberman, 1981) indicate collaborative research of this nature can yield rich results.

The ARCS study is not intended to prove a particular set of hypotheses but rather to generate hypotheses and ideas based on teachers' perceptions, experiences, and deliberate study of the issues they choose to investigate. The project is designed to demonstrate that classroom teachers can function as practical researchers focusing on the real problems of the classroom and school.

Working hypotheses emerging during the first year of the project are as follows:

- Group process roles of action research team members influence the dynamics and outcomes of collaborative action research.
- Individual dimensions of teachers (adult life and career phase, stage of development, learning style) influence the collaborative research process.
- School context variables affect the collaborative research process (communication, collegiality, role of the principal, experimentation, school history, shared experiences, and the sociological dimensions of time).
- Collaboration is a multi-faceted concept as reflected in the following situations:

    Collaboration between school and university.
    Collaboration within each action research team.
    Collaboration among teachers on the action research team and other teachers in the school.
    Collaboration between the university researchers located in different parts of the country.

The project is documenting teachers' and researchers' perceptions of the following issues related to the context of the school and the process of collaborative action research: empathy and taking the perspective of others; confidentiality and collegiality; role of the principal; role of the teacher; power, decision-making and change; teacher and school morale, and collaboration.

The ARCS project reflects elements drawn from the history of collaborative action research in education (Corey, 1953; Elliott, 1977; Lewin, 1948; Little, 1981; Tikunoff, Ward, & Griffin, 1979). Key elements of the project, such as teacher-defined research, teacher-researcher collaboration in all phases of the research, and the use of research results to improve school practice are those which have characterized action research since its inception in the 1940s.

Teachers for the two ARCS research teams were selected in September, 1981. The research teams began meeting in October, 1981, and will complete their studies in May, 1983. Both teams found that scheduling affected all dimensions of their school. They found that decisions about the allocation of time affect the curriculum, student learning, student and teacher relationships, and opportunities for innovation; that the schedule reflects a school's priorities and values about the educational process; that scheduling can provide significant flexibility or severely limit flexibility; and that scheduling can promote collegiality or fragmentation. Both ARCS teams decided that the area of scheduling was a significant question to be addressed through action research.

PROPOSAL ON MIDDLE SCHOOL SCHEDULING

This proposal describes the research process used by one ARCS team to modify the existing middle school schedule in the Michigan site. The team first used teacher and administrator surveys to assess opinions about the schedule, team teaching, middle school philosophy, grouping, and time management and planning. They also surveyed a random sample of 90 middle school students for their opinions in areas related to scheduling, including learning needs and styles, the schedule itself, time allocation, and subject matter organization. The ARCS team reviewed literature on middle school scheduling and philosophy and examined the relationship between the middle school's current scheduling practice, its philosophy, and the school district goals and curriculum. It will conduct in-depth interviews with teachers and a random sample of parents to provide further data on perceptions and opinions about the middle school and its schedule. Based on the data collected, this ARCS team plans to implement and evaluate alternatives for the current schedule.

PROPOSAL ON JUNIOR HIGH SCHOOL SCHEDULING

In the second proposal, teachers from the New Hampshire ARCS site describe an evaluation study of scheduling in their own and several other junior high schools. Within this framework, the team will undertake a descriptive case study of its own school context, the school philosophy and the match between the philosophy (goals, objectives, and junior high priorities) and the scheduling practices related to teacher teaming and student ability grouping. The ARCS team will describe the current school context, philosophy, and current practices. The team will present its analysis of the strengths and weaknesses of current practices in light of teacher morale, job satisfaction, and student learning. Site visits to other schools and a review of relevant literature will provide data on alternative scheduling procedures. The study will culminate in a recommendation to the school principal of schedule modifications which are 1) consistent with their operational definition of a junior high school and 2) substantiated by their surveys, literature review, and field observations.

Teachers from both collaborative action research teams began the project with little background in formal research methodology, or had not applied the research skills they had to existing school-based concerns. Through the ARCS project, teachers are learning to apply research techniques to problems which they have identified in their existing school contexts. Although the roles of teacher and researcher may conflict at times, the experience is providing new insights for those involved in the ARCS project.

A description of the key activities and events of the first year of the ARCS project can be found in the following reports available from Sharon N. Oja at the ARCS project office, Morrill Hall, University of New Hampshire, Durham, New Hampshire 03824:

I. ARCS: Initial Description of Participants and Sites

II. ARCS: Beginning a Collaborative Action Research Project

III. ARCS: The Process of Collaboration in Action Research

IV. ARCS: Syracuse Conference: Collaboration Between Action Research Teams

Proposal for Research

MIDDLE SCHOOL SCHEDULING

Michigan

ARCS Research Team*

Lori Chapel
Florence Cook
Jane Eyre
Jim Maki
Anne Sulak

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*To preserve confidentiality, ARCS teachers have chosen alias names.

INTRODUCTION AND STATEMENT OF THE PROBLEM

The Michigan Action Research team spent the greater part of our initial team meetings developing a feeling of collegiality among ourselves. Our discussions were honest and forthright, focusing on a number of concerns which, among others, included the major events (over which we as teachers have no control) that occur during the school day and our reactions to them, the quality of work life in our middle school and its effect on our personal lives, the broad issue of student motivation, the history of the school, decision making in the school, the role of the principal, as well as a host of others.

Once we reached consensus on our major concern, we attempted to label it -- a task far more difficult than we had anticipated. Our first label was time management, but that seemed too confining a topic because it didn't include some of our concerns like student achievement and the quality of work life. We finally agreed the topic of scheduling encompassed our concerns.

To define the problem of scheduling more specifically each of us wrote a short paper in which we shared our speculations, hunches, and impressions about the significance of scheduling and its impact on the lives and work of teachers and students. We see scheduling affecting all dimensions of the middle school. Time is one of the most precious resources in the educational system and decisions about its allocation affect the curriculum, student learning, student and teacher relationships, and opportunities for innovation. The schedule reflects priorities and values about the educational process in a school. It can provide significant flexibility or severely limit flexibility. It can promote collegiality or fragmentation. The schedule can serve the school and its students or it can make the school and its students serve the schedule. The ramifications of scheduling are pervasive and touch upon almost every aspect of the school. In our judgment it is an area worthy of action research.

QUESTIONS TO BE STUDIED

From our analysis and discussion we have narrowed down the topic of scheduling to two researchable questions:

1. How can the school day be scheduled for the optimum intellectual and affective development of the middle school child at our middle school?

2. How can the school day be scheduled to improve the quality of work life and the professional productivity and growth of teachers?

In an attempt to answer the two major research questions, we will consider these additional issues:

- What are the essentials of scheduling? What are the givens and necessary conditions or the critical mass of personnel and resources required for an effective schedule?

- How do district goals and curriculum affect scheduling in the middle school? How does the district time management model affect scheduling?

- How does the middle school philosophy affect the scheduling? How does the schedule affect the middle school philosophy?

RESEARCH STRATEGIES

To define the parameters of the study, refine the research questions, and identify hypotheses to be tested, we decided to take the following approaches:

1. Survey teachers and administrators for their opinions in five areas related to scheduling: scheduling itself, team teaching, middle school philosophy, grouping, and time management and planning.

2. Survey a random sample of middle school students for their opinions in areas related to scheduling: learning needs and styles, scheduling itself, allocation of time, sequencing of learning, subject matter organization.

3. Review the district's Middle School Philosophy to see if scheduling practice is consistent with philosophy.

4. Review professional literature on middle school scheduling and philosophy.

5. Examine how district goals and curriculum affect middle school scheduling.

6. Secure consultants with middle school expertise to discuss current middle school philosophies and practices.

7. Follow-up teacher survey with in-depth interviews with teachers.

8. Interview random sample of parents for their perceptions and opinions regarding the middle school and scheduling.

9. Identify roadblocks and resistances to change.

DATA COLLECTION PROCEDURES

We reviewed an ERIC compilation of abstracts on the middle school, read and shared articles, collected samples of middle school schedules and philosophies, recorded our thoughts about scheduling and middle schools in daily logs, and conducted surveys.

We designed two surveys (see Tables I and II) -- one which we administered to the teachers in our building at a luncheon and the other which we administered to a random sampling of 100 students in our school. The results (see Tables I and II) of the surveys have helped us in shaping the direction of the research and in identifying more clearly issues which require further study.

Teacher Survey

An analysis of the data collected through the teacher survey identified team teaching, middle school philosophy and approach, class size and scheduling of common courses within the same grade level as questions which require more examination. While the quantitative information yielded by the survey has been valuable in determining areas for further study we believe qualitative data are needed to develop a richer understanding of teacher perceptions and concerns. To secure such data we plan, as our next step, to interview a random sample of teachers.

TABLE I

Michigan Teacher Survey

Please indicate how you feel about the following statements:

A. Definitely agree
B. Agree
C. Maybe
D. Disagree
E. Definitely disagree

	A	B	C	D	E
1. Your current schedule best utilizes your talent as a teacher.	4	8	5	5	2
2. There is time for you to plan for all your classes.	5	3	7	7	2
3. Team teaching is beneficial for teachers.	4	7	11	3	-
4. You know our current middle school philosophy.	7	9	7	2	
5. You teach to our middle school philosophy.	5	8	9	1	
6. Your class sizes should remain the same.	4	6	4	6	5
7. You have time to discuss student problems with a colleague.	3	8	6	7	1
8. You have time to talk to other staff members.	2	8	5	10	1
9. You have time to share ideas and materials with other staff members.	1	5	7	10	3
10. There is time to make teacher made materials and lesson plans.	2	4	8	9	2
11. You feel qualified about teaching your subject matter.	18	6	1	1	
12. Your classes meet middle school children's needs and interests.	6	15	4		
13. You have gained teaching flexibility through your middle school teaching experience.	10	8	5	1	
14. There should be a permanent substitute teacher in the building to provide flexibility in the teaching schedule.	13	5	2	2	
15. Students should be grouped by ability in math.	16	7	4		
16. Students should be grouped by ability in reading.	16	6	3		

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TABLE I - Michigan Teacher Survey con't

	A	B	C	D	E
17. Students should be grouped by ability in English.	8	7	4	3	2
18. Students should be grouped by ability in social studies.	6	5	8	2	2
19. Students should be involved in planning their own schedules.	4	1	9	6	4
20. You have time to form lesson objectives and break them down into small steps.	2	5	7	7	3
21. Your schedule provides planning time to accommodate individual differences among students.	2	2	6	11	3
22. You would like to be part of a teaching team.	4	4	14	3	-
23. You prefer to work individually rather than in a team.	3	7	11	4	
24. You like to have your planning period in the morning.	2	4	9	4	4
25. You like to have your planning period in the afternoon following lunch.	6	5	11	2	-
26. An academic teacher should also work with a group of students daily in an activity situation.	1	3	9	9	3
27. Every teacher should teach reading.	2	1	4	9	9
28. You prefer to teach at one grade level.	1	3	10	10	2
29. You would like to have a new roster of students each semester.	5	3	3	11	3
30. Every teacher should have the same amount of planning time.	9	8	3	4	1
31. You have special knowledge or talent that enables you to organize and teach an elective course.	8	7	8	1	1
32. You would like to have a rotating schedule that varied from day to day.	2	1	2	8	10
33. You would like to have a rotating schedule that varied from week to week.	2	-	4	8	9
34. Scheduling should permit a matchup between teachers' teaching styles and students' learning styles.	5	5	8	3	2
35. Several sections of the same grade level and the same subject should be scheduled at the same time.	7	7	9	-	-
36. Standardized testing should not be done by classroom teachers.	1	5	6	11	1

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TABLE II

Middle School Student Survey

STUDENT SURVEY

	Agree	Disagree	
1.	72	18	I like an activity period during the day.
2.	72	18	I learn best when the teacher gives a lot of examples.
3.	29	61	I would like more time in the day to learn math.
4.	18	72	I learn best when I am one of the fastest students in the class.
5.	81	9	I would like a study period during the day.
6.	23	67	I need more time to learn science.
7.	39	51	I learn best when I can work independently (by myself) with little explanation and supervision.
8.	54	36	I learn best when the classwork is challenging.
9.	28	62	I learn best when I am a leader in the class.
10.	23	67	I would like more time in the day to learn English.
11.	66	24	I like to participate in class orally.
12.	34	56	I learn best when my hard subjects are scheduled in the morning.
13.	26	48	I need more time to learn social studies.
14.	23	68	I learn best when the classwork is easy.
15.	65	25	I learn best when my hard and easy subjects are mixed during the day.
16.	22	68	I don't like to participate in class orally.
17.	50	40	I learn best when the classwork is hard.
18.	51	39	I would like more time in the day to learn science.
19.	36	54	I learn best when my hard subjects are scheduled in the afternoon.

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TABLE II

Middle School Student Survey
Continued

	Agree	Disagree	
20.	45	46	I would like to have a rotating schedule so that my schedule of classes is different each day of the week.
21.	54	38	I learn best when I do a lot of project work.
22.	29	61	I need more time to learn reading.
23.	64	26	I learn best when I can work in a small group situation in class.
24.	67	23	I learn best when I can work with a partner.
25.	29	61	I would like more time in the day to learn social studies.
26.	83	8	I learn best when I can take my time in doing my classwork.
27.	70.5	19.5	I would like to have a ten to fifteen minute period at the end of each class to do homework.
28.	27	63	I would like to have more time in the day to learn reading.
29.	22	68	I like learning when I don't have to participate in class.
30.	52	38	I learn best when I can work with a lot of direction and supervision from the teacher.
31.	18	72	I need more time in the day to learn math.
32.	53	37	I would like to work on projects with students from other classes during the day.
33.	66	24	I learn best when I can help other kids learn.
34.	40	50	I learn best when I can get help from other kids in class.
35.	41	49	I need more time to learn English.
36.	62	28	I would like to help teachers teach kids in the elementary school.
37.	57	33	I would like more time in the day for silent reading of stories and novels.
38.	75	15	I would do better on tests if I had only one test to take a day.
39.	62	28	I would like some of my classes to be shorter or longer than 45 minutes.

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Student Survey

We found the results of the student survey to be most interesting in terms of their implications for middle school scheduling and for teaching and learning styles. Students indicated they would like an activity period during the day (72-18), a study period during the day (81-9), a ten to fifteen minute period at the end of each class to do homework (70-20), and classes to be shorter or longer than forty-five minutes (62-28). They reported they learned best when: the teacher gives a lot of examples (72-18), the classwork is challenging (54-36), hard and easy subjects are mixed during the day (65-25), in small group situations (64-26), working with a partner (67-23), with a lot of direction and supervision from the teacher (52-38), working on projects with students from other classes (53-37), and helping other students learn (66-24). Students are interested in helping teachers instruct elementary school children (62-28). They believe they would do better on tests if they had only one test to take a day (75-15).

An analysis of essay questions dealing with learning revealed that at all three grade levels students felt overwhelmingly that they learned best in small group, "hands-on" activities. The younger the students the more they chose this learning style. In describing their best learning experiences the predominant response among the students was to identify a specific teacher or an activity in science or social studies.

RESEARCH DESIGN AND DATA COLLECTION

From our analysis of the data we proposed to pilot an innovation to scheduling to test the following hypotheses:

1. Block and/or self-contained scheduling will reduce discipline problems.

2. Block and/or self-contained scheduling will facilitate the integration of the curriculum.

3. Block and/or self-contained scheduling will improve student-teacher relationships.

4. Block and/or self-contained scheduling will better accommodate different student learning rates and styles.

5. Block and/or self-contained scheduling will enable teachers to better meet the affective needs of middle school children.

6. Block and/or self-contained scheduling will facilitate the improvement of student learning.

7. Block and self-contained scheduling will enhance the quality of work life for teachers.

8. Block and/or self-contained scheduling will help to improve teacher productivity.

9. A professional staff development program on middle school scheduling will facilitate the implementation of a pilot scheduling project.

To test the hypotheses we will collect data via the following methodologies.

1. Pre- and post-test evaluation of the pilot project.

2. Formative evaluation on the process of change and innovation implementation.

3. Documentation to track implementation of the pilot project and the staff development program.

4. Case studies of teachers and students to monitor project impact and to assess individual change.

5. Independent observational study of teaching and learning in the pilot project.

6. Follow-up surveys of teachers and students.

Proposal for Research

JUNIOR HIGH SCHOOL SCHEDULING

New Hampshire

ARCS Research Team*

John Alden
Brooks Johnson
Jack D. Parte
Elliot Rosewater
Ted Williams

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*To preserve confidentiality, ARCS teachers have chosen alias names.

June 1, 1982

Action Research on Change in Schools
New Hampshire

Research Proposal

INTRODUCTION AND STATEMENT OF THE PROBLEM

The New Hampshire Action Research on Change in Schools (ARCS) team consists of five teachers, one researcher from the University of New Hampshire Education Department, and one research assistant, a doctoral student at Harvard University. The team began the 1982 school year with a series of 4 or 5 team meetings at which we talked about the junior high school context, and how changes have occurred within it. We discussed how decisions were made in our school and system and the roles different people played in that process. We frequently discussed the role of the principal in the school, because we were in the process of hiring a new principal, who was finally appointed and began working here in November. As we talked, many problems emerged which face education in general and our school in particular. Central among these seemed to be the issue of scheduling, which affected teaching and learning conditions in the school.

As a result of these early discussions of the school context, one teacher team member has begun compiling a history of school policies and decisions related to scheduling over the past 10 years. (Appendix A is a draft outline of this history.) We think this will be helpful to us in our research and to other teachers and administrators in our school in the future.

As the ARCS team focused on the issue of scheduling, we tried to narrow it down to a researchable question. The question we initially chose to research was, "How can we make scheduling changes to benefit our school?" We decided that issues of homogeneous vs. heterogeneous grouping, class length, school within a school or teaming, department chairs vs. house coordinators, and flexible or modular scheduling were important factors in this school related to the issue of scheduling. Specifically these factors seemed to relate to teacher morale, communication, and their ability to do a good job toward student learning.

As our first step, we designed a questionnaire (see Appendix B) addressing these issues which we personally gave to all certified personnel in the school. Each of the five teacher team members interviewed 9 or 10 staff members. All school staff had been divided evenly and randomly assigned to be interviewed. The average time per interview was 30 minutes without considering the time and effort involved in scheduling the interview which may have been considerable. All interviews were completed within a week and a half period. By collecting data from the teachers we hoped to involve them in the project and give them a sense of ownership in the project as well. In collating the results, we found that academic and non-academic teachers ranked ability grouping (i.e., homogeneous vs. heterogeneous classes) and school within a school (i.e., teaming) among their top three priority issues worth further investigation. We decided that those would be the two areas within scheduling on which we would focus our research.

At that point we modified our original question. "In what ways do homogeneous/heterogeneous grouping and teaming affect teacher morale and job satisfaction and student learning?" We decided to research these issues on scheduling and suggest four or five alternative schedules which would reflect our findings of what would be best for teachers and students. The final decision to implement one of these schedules rests with our school principal.

REVIEW OF RELATED LITERATURE

We are presently pursuing several different methods of data collection about scheduling. We have done an ERIC search on middle school/junior high scheduling, and we read and shared the articles which address the issues which concern us. We are also planning to visit other schools which use schedules that have some of these characteristics. We are in the process of identifying schools to visit, by contacting a number of local and state organizations who may have such information.

The ARCS team reviewed the citations listed in an ERIC search, gotten by a University team member, using these key words which were determined by the whole team: middle school/junior high scheduling, flexible scheduling, house plan, homogeneous grouping, and heterogeneous grouping. The ERIC search resulted in 75 citations. A teacher member reviewed all the citation abstracts and chose 15 articles to be Xeroxed in full. The

Action Research team members divided the 15 according to personal interest and read and reported on them. Three of the articles seemed related but were not helpful. Four articles were very helpful. All seven are described briefly in the following section.

Arthur Razzell (1978) investigated mixed ability teaching in middle school. This article was not pertinent to our research question as the school context was an English middle school with groups and needs so much different that our school. The article provided little information or direction.

The Vermont-New Hampshire Middle Grades Survey Report (Michael Allen, 1980) was a survey of 16 Vermont and 33 New Hampshire middle schools. Information gathered from schools described enrollments, feeder schools, optional subjects given, faculty training and time schedules. Conclusions and recommendations for improving middle grade education in both states did not apply to the specific issues being investigated at our school by the Action Research team.

Ray Constantino and Charles Larue (1974) described a program for middle school science which included a team approach and a three year rotation. The science teacher on the ARCS team felt our school's program is better and thus the article would not help in our school.

Donald W. Johnson (1976) reported on developing and implementing an effective student and teacher assignment schedule. Johnson gave information as to strategies for collecting information in order to build a workable schedule for students, teachers, and administrators. The article included sample schedules, parent survey, assessment graphs for math and reading tests, profiles of district performance and state performance in testing program. The school context described by Johnson seemed to include many of the same issues the New Hampshire Action Research team is exploring. This article is very pertinent to our research.

In James Cole's (1975) paper, variable junior high school schedules were developed to inject variety and expanded course offerings in the traditional daily schedule. This report collects tables, figures, and diagrams to explain the Racine, Wisconsin junior high school variable scheduling plan. Sample student schedules, programs of studies, the rotation cycle, and comparisons with traditional scheduling are included. Our principal kept a copy of this article because of its clarity in the mechanics of scheduling.

In Gary, Indiana at the Edison Middle School a new placement and grouping system is being used in math. Math tests were sorted according to the lowest math skill not mastered by each student. Students were then placed in special classes devoted entirely to one specific math skill. No attention was paid to grade levels in these classes. When the citywide checkpoint exam was administered the following spring to all seventh and eighth graders Edison scores were the best in the city. Results like this seem to present a strong argument for grouping according to achievement levels in math rather than math grouping within grade levels as is currently being practiced at our school.

The effect of class heterogeneity in junior high school English classes was investigated by Carolyn M. Evertson, Julie Sanford and Edmund Emmer (1981). The data cited in this study was collected from 27 junior high school English classes in a large metropolitan school district. Variables of degree of homogeneity, classroom management, adaptation of instruction to individuals, and student task engagement and cooperation were looked at. Findings suggest that extremely heterogeneous (English) classes appear to have limitations in student achievement and task engagement and cooperation of students which are related to the teacher's classroom management skill and adaptability to students' needs. These authors suggest that extremely heterogeneous classes are less than ideal for a learning environment. These last two articles are helpful to the ARCS team because our junior high school's administrators' and teachers' scheduling objectives are moving from extreme heterogeneous grouping in all subjects to top students in math and English being homogeneously grouped within grade level. (See questionnaire results in Appendix B.)

REVIEW OF THE LITERATURE ON TEACHER MORALE

Several themes of the ARCS team's discussions of our school context were in the areas of lack of communication, low teacher morale and teacher's lack of satisfaction in their ability to do a good job. Members of the team became increasingly interested in these issues and their relationship to the project's central focus of scheduling.

A review of the literature indicates that the most current work in teacher morale is being researched under the focus of stress in teaching. An article by Elizabeth S. Manera and Robert E. Wright (1979), "Stress

Factors in Teaching," had 3 groups of teachers participate in a Q-sort of 14 stress factors related to their job field. The broad concept of communication seemed "embedded in the top 4 items selected by the participants." Although classroom management and discipline are mentioned as top concerns of teachers in current articles these authors suggest that "perhaps communication or the lack of communication tends to cause more stress among educators . . .."

Additional articles on teacher stress which were reviewed focused on the new concept of teacher "burnout": who are our burned out teachers? how can we identify stress leading to burnout? what elements in a teacher's job definition or the context of the school may contribute to stress leading to burnout? how does teacher stress show up in attitudes towards students and students' learning? (Iwanicki & Schwab, 1981; Schwab & Iwanicki, 1982a, 1982b; Schwab, 1982).

We wondered what effects scheduling objectives in our school had on teacher's levels of stress and burnout and if scheduling changes in teaming and ability grouping might decrease teacher stress and improve teacher morale, communication, and job satisfaction.

The studies on burnout were based on a survey instrument used with teachers, the Human Services Survey (Maslach & Jackson, 1981), which identified the three variables of emotional exhaustion, negative attitude toward students, and teachers' feelings of lack of personal accomplishment on the job as measures of stress and burnout.

One member of the team did study the following other survey instruments considered for use in collecting data on teacher morale and job satisfaction. These were the Leadership Behavior Description Questionnaire (LBDQ), the Organizational Climate Description Questionnaire (OCDQ), the Job Satisfaction/Dissatisfaction Questionnaire, and the Minnesota Teacher Attitude Inventory (MTAI). This teacher recommended that the ARCS team use the Human Services Survey designed by Maslach and Jackson and validated with teachers by Richard Schwab and Edward Iwanicki. She cited a number of reasons which convinced the team of the value in using the Human Services Survey to gather information for this part of the research plan.

SELECTION OF RESEARCH STRATEGIES AND FRAMEWORK

The research question was formulated when the ARCS team observed that the school's schedule was an overreaching issue everpresent during discussions of school context and the teaching/learning environment. Past decisions related to the implementation of school-within-a-school format, teaming, and ability grouping were often predicated on constraints imposed by the schedule. The team, therefore, decided that a search for a schedule which would permit flexibility in adopting various aspects of the above concepts was needed and appropriate for our action research. Once the research question became clearly stated, in what ways do ability grouping and teaming affect teacher morale and job satisfaction and student learning, the team looked for possible research models. The following alternatives from Borg (1963) were presented by a teacher member: historical, descriptive, developmental, case and field, correlational, causal-comparative, quasi-experimental, and action research. A University member presented the newer research and development and the evaluative frameworks for the group's additional consideration (Borg & Gall, 1981). Sample models of the action, the research and development, and the evaluation frameworks which addressed our research questions were presented by University members. The team's preference appeared to be the three models just cited because each seemed able to encompass the larger issues of scheduling as identified for our school.

Discussion centered around the research and development and the evaluation frameworks due to the team's interest, goals, and comfort with these designs. The team considered many factors before choosing a design framework: time factors (length of project and personal time), team members' familiarity with research procedures, appropriateness to study the school context, and exploration of research question and sub-questions.

The New Hampshire ARCS team finally decided that an evaluation design would be the best choice. Within this framework, the team will undertake a descriptive case study of one school context, the school philosophy, and the match between the philosophy (goals, objectives, and junior high priorities) and the scheduling practices related to teaming and ability grouping. The ARCS team will describe the current school context and philosophy and current practices. The team will analyze the strengths and weaknesses of current practices in light of teacher morale, job satisfaction, and student learning. We will also investigate alternative scheduling procedures and will recommend major/minor changes in scheduling which will be 1) consistent with our operational definition of what a junior high school is and 2) substantiated by our surveys, literature review, and field observations.

KINDS OF DATA TO BE COLLECTED

In order to examine how scheduling variables of teaming and ability grouping relate to teacher morale and job satisfaction we need more information from the teachers themselves. We considered collecting data from students and admnistrators as well on the effects of these scheduling variables, but chose to concentrate on teachers.

We will collect data from teachers concerning their opinions of the schedule and the relation of the teaming and ability grouping variables to their level of job satisfaction and their general level of morale. We will also collect self report measures of teacher emotional exhaustion, negative attitudes toward students, and feelings of personal accomplishment using the Human Services Survey. Data collection will take place in Spring, 1982 and again in December, 1982 to enable us to analyze the strengths and weaknesses of current practices as well as some schedule modifications to be implemented in Fall 1983.

We will also conduct field observations of other schools similar in context to ours, trying to examine whether or not certain aspects of scheduling goals or objectives (e.g., teaming, ability grouping) are systematically related to certain teacher perceptions of levels of morale, job satisfaction, and student learning.

DATA TO BE COLLECTED

1) Levels of emotional exhaustion, depersonalization (negative attitude toward students), and personal accomplishment of teachers. These are the three subscales of the Human Services Survey.

2) Teachers' opinions about teaming and homogeneous/heterogeneous grouping and their perception of the relation of these variables to job satisfaction, level of morale, and student learning.

3) Levels of emotional exhaustion, depersonalization, and personal accomplishment of teachers at selected schools similar in context to ours.

4) Teacher opinions at selected schools similar in context to ours about teaming and ability grouping and their perception of the relation of these variables to job satisfaction, level of morale, and student learning.

5) Principal's scheduling goals and opinions about teaming and ability grouping (from our principal and principals at the field observation sites).

DATA COLLECTION PROCEDURES

We began collecting data in November, 1981 by interviewing all of the school's certified staff about their perceptions of the existing schedule, including what they would like to see changed in it. The new principal took office at the same time we were designing our initial questionnaire. We showed him a copy and asked if he would like to add anything. He said most of the questions were ones he would have asked anyway and he would be interested in the results. In January, 1982 after the data were collated and results presented to all staff, the principal said he used some of this information to consider schedule modifications for the next year, 1982-83. (See Appendix B for results of this initial questionnaire.) In May, 1982, the principal was interviewed by 2 teacher members of our team to clarify scheduling concerns and goals for the 1982-83 year.

To probe teachers' attitudes further, we considered another questionnaire and/or interviews with a sample of teachers. We discussed whether or not we wanted to collect this information from all teachers or just a sample, and decided that the more teachers we could reach, the more complete our information would be.

We administered the Human Services Survey in early June to all teachers in the school. This will provide us with information about teacher's level of emotional exhaustion, depersonalization, and personal accomplishment. We attached a one page questionnaire to this inventory which asked teachers about their perceptions of teaming and ability grouping and the effects of these variables on their level of job satisfaction and morale. We will follow up on the questionnaire with interviews of a sample of teachers in the school. The inventory and questionnaire will be administered again in December, 1982. (Appendix C shows the Human Services Survey and Questionnaire.)

We may also administer the Human Services Survey to teachers in the other schools during the field observations. Appendix D shows the letter we have sent to a variety of educational personnel in the six state area (Connecticut, Maine, Massachusetts, New Hampshire, New York, and Vermont) to help us identify schools to visit. Response from our letters is encouraging for our research topic and for field site suggestions.

DATA COLLECTION PROCEDURES

a) Teacher members of ARCS team divide staff and conduct personal interviews with staff December, 1981 on scheduling practices and concerns
b) Teachers surveyed in Spring of 1982 and again in December of 1982 connecting scheduling practices and changes in teaming and ability grouping with teacher morale and perceived effects on teaching and learning conditions
c) Two members of ARCS team to visit other schools and conduct field observations using interviews and questionnaires to investigate alternative scheduling practices
d) Literature review to investigate alternative scheduling procedures
e) Description of the history of the policier and decisions related to scheduling practices in the last 10 years at our school
f) Description of current scheduling practices at our school
g) Description of the school philosophy (goals, objectives, and junior high priorities)

TIMELINE

This year we tried to develop the ability to plan the best possible use of our resources to achieve our goal within time and cost limitations. Our time chart will remain flexible since we have revised it several times. The following is our current timeline for the remainder of the project.

Summer, 1982	-	Begin descriptive statement of school philosophy using May, 1982 transcript of interview with principal

	- Complete the descriptive history of the policies and decisions related to scheduling practices in past 10 years - Prepare teacher survey data for analysis: key punch computer cards, run initial computer analysis
September	- Orientation for second year of project - Describe current scheduling practices and any recent modifications
October and November	- Design and conduct site visits and field observations - Analyze data on alternative scheduling practices
December	- Survey teachers again using the Human Services Survey - Analyze data and develop conclusions
January, 1983	- Make a recommendation to the principal
February-April	- Write a report of the findings to be used by other school practitioners in investigating and modifying their own scheduling plans

DATA COLLECTION AND DATA ANALYSIS

As mentioned earlier, some data collection and analysis has already been done. We have interviewed all staff members about their perceptions of the present schedule, including their thoughts on teaming, length of classes, and ability grouping in different subject areas. The analysis of this data was used to direct the team's discussion of a specific research question.

Data will be collected from our school this Spring, 1982, and from other schools during the Fall of 1982, using the data collection tools described above. The team will analyze the data as it is gathered, and will use the results to recommend a schedule that meets teacher and student needs.

SCHEDULE OF CONCLUSIONS

An analysis of our data should indicate which organizational scheduling formats relative to teaming and to ability grouping lead to teacher satisfaction and student learning. We will use these conclusions to recommend schedule changes or support existing scheduling practices which further teacher satisfaction and student learning. We will write a report of our findings which could be used by other school practitioners in investigating and modifying their own scheduling plans. We would consider presenting our report to the other junior high schools in our area, to the superintendent of our district, and other interested people. Further development plans will be decided in 1983.

Appendix A

24 March 1982

DRAFT

John Alden

These are the dates changes were made in our school system. I have tried to show the programs in chronological order. They are as accurate as a teacher's memory will permit.

1970-71

Double tracked ability grouping - Math track and English track

16 Grade 8 classes grouped A-P

10 Grade 7 classes at main building

6 Grade 7 classes at annex

St. Patrick's Parochial School in main building to take classes in shop, home economics, and physical education. A school built for 550 students at one point now houses over 1,000 students

Title I program begins

Office detentions from work program to locked-in (all students in a classroom) program

Superintendent orders science to develop and teach a program in sex education.

1971-72

Two new science labs

New science program developed during summer

Science on a seven week rotating program

Each student, 5 courses

5 teachers in main building

Teachers hand out own marks every 7 weeks

One 8th grade class broken and students placed in 5 other classes for science.

1972-73

Flexible multilevel parallel tracking program both grades

All students in four groups

- A - Advanced
- B - High Average
- C - Low Average
- D - Below Average

Classes within ability groups mixed

1973-74

During year principal leaves. Assistant principal becomes temporary principal; then retires. A new principal is selected. Annex principal becomes new assistant principal. New annex principal

New principal starts a faculty senate which meets weekly to discuss school problems. Members are selected by departments

Junction program begins?

1974-75

Staff development program to 5 school boards. It is approved

Principal move to high school, new principal again at junior high

May-7th period mini-courses assigned to all teachers

Junior High building program approved

Parochial students no longer come to Jr. High

1975-76

Districtwide staff development 6 year plan now in operation

School on split sessions at two buildings, 2 morning groups, 2 afternoon groups. Extra time to be used by teachers for meetings, school visitations, special planning

Special team project afternoons at annex in which 5 teachers try total team approach with 4 classes: 2 above average, 2 below average

Mainstreaming of all students begins

Weekend conference in Dover, brainstorming issues in teaching

1976-77

4 schools-within-a-school established at the Jr. High. Each school has a team of teachers, students, and specialists. Each school's schedule is developed by teachers within designated time blocks. Each school has an unpaid house coordinator. Split sessions continue until Christmas

One school has fewer students but all Title (special needs) students

Teacher Corps project submitted and approved

1977-78

4 house coordinators in charge of 4 houses (department heads dropped - principal and vice principal now department heads)

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Houses balanced: each has same number of students. Time blocks established; each house given lunch time and specials and is free to create schedule in rest of time. Students traveled in groups

Teacher Corps project 2 years

Junction program ends

Supervisory union broken

School district separates from 4 towns. Area agreement still in effect. Towns still send students to high school

Newington has area agreement for 7th and 8th grade students to be educated at our schools

1978-79

KIDS II project starts for emotionally handicapped

KIDS II mainstreamed when possible (science and social studies)

Last year of Teacher Corps

I.E.P. students all in one house

1979-80

1980-81

P.E.E.P.S. program begins for preschool special education students

One house eliminated: teachers reassigned from 4 to 3 teams

I.E.P.s all houses

1981-82

Principal leaves. Temporary principal. New principal (former staff member) hired

Project A.R.C.S. begins

3 houses remain; 2 house coordinators serve all three houses

Schedules done by house coordinators (up to now vice principal in charge of scheduling)

In-school suspension program starts

7 period schedule instituted

Appendix B

ACTION RESEARCH ON CHANGE IN SCHOOLS

TEACHER SURVEY - NEW HAMPSHIRE

3 February 1982

TO: All Staff Members

FROM: Action Research Team

RE: Teacher Survey

Attached you will find a copy of the results of a recent survey you completed. The charts represent a detailed breakdown of the responses. The four academic areas appear first, math; social studies; science; and English; and then a sub-total. Next are five additional areas: home economics; industrial arts; music plus art plus physical education grouped together; resource people; and administration plus guidance followed by a sub-total of these areas. The overall school total is shown in the last column.

In questions that asked for an extended response, the most frequently mentioned top three responses are published. Responses are additionally broken down by academic teachers and non-academic teachers (meaning all other staff members). There were many more comments that were too numerous to print. All of your comments will be considered by the Action Research Team. In the near future, it is hoped that the Action Research Team will have a meeting to allow teachers to meet with us to discuss your concerns.

The Action Research Team greatly appreciates your cooperation and always welcomes your input. Again, many thanks for your assistance.

plw

Attachment

Appendix B

NEW HAMPSHIRE
ACTION RESEARCH ON CHANGE IN SCHOOLS
TEACHER SURVEY
RESULTS

Preamble: I am a member of a 5 person action research team. (The members are John Alden, Brooks Johnson, John D. Parte, Elliot Rosewater, and Ted Williams.) Lisa Smulyan and Sharon Oja, working out of the University of New Hampshire, are also members of the team. The action research team has been funded by the National Institute of Education for a two year period to research issues of change in schools. We decided to conduct research on an issue important to our school. Scheduling seems the leading concern and problem.

Using the following format, we plan to interview all staff members who wish to be interviewed to determine their views on scheduling and related issues. We also wish to solicit your suggestions on specific avenues of research.

Your responses will be confidential. Aggregate results will be publicized. The findings are to help us direct our research.

(Have you any questions before we begin?)

Most of the responses have the following format: a) strongly disagree, b) disagree, c) agree, and d) strongly agree.

I. Views on Present Scheduling

1. The present schedule is satisfactory

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	2	1	1	4	3	2	3	2	3	13	17
b. disagree	3	3	3	3	12	1	1	1	1	0	4	16
c. agree	1	2	1	2	6	0	1	1	3	0	5	11
d. strongly agree	1	0	0	0	1	0	0	0	0	1	1	2

2. What things do you like most about present schedule?

Academic teachers	Non-Academic teachers
a) Length of class period	a) Length of class
b) Five academic classes	b) Seven period day
c) Small classes	c) Nothing

3. What things do you like least about present schedule?

Academic teachers	Non-Academic teachers
a) Study halls	a) Poor arrangements for specials classes
b) Lack of flexibility	b) Study halls
c) Not enough extra time during day for house meeting	c) Periods too short and too many classes

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II. Schools-Within-A-School

1. The schools-within-a-school organizational concept should be retained.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	2	0	2	0	0	0	0	0	0	2
b. disagree	1	0	1	1	3	0	0	2	3	0	5	8
c. agree	3	1	1	2	7	4	2	3	1	3	13	20
d. strongly agree	1	6	1	3	11	0	2	0	2	1	5	16

2. What things do you like most about "schools-within-a-school"?

Academic teachers	Non-Academic teachers
a) Teachers share common group of kids	a) Students have identity
b) Students have identity	b) Teaching teams meeting time together to discuss kids
c) Smaller classes	c) Less confusion - more organized

3. What things do you like least about "schools-within-a-school"?

Academic teachers	Non-Academic teachers
a) Isolates teachers from other teachers	a) Specialists not involved in teams
b) Its not like it used to be	b) Isolates teachers and kids
c) Not enough total school identity	c) Decreases flexibility

4. Teaching teams should have the opportunity to meet during school hours.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	0	1	2	0	0	0	0	0	0	2
b. disagree	0	0	0	0	0	0	0	1	0	0	1	1
c. agree	1	1	3	3	8	4	3	4	2	0	13	21
d. strongly agree	3	5	2	2	12	0	1	1	4	4	10	22

5. Teaching teams memberships should be determined by the teachers.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	1	0	2	0	0	1	1	0	2	4
b. disagree	0	1	1	0	2	1	1	1	1	0	4	6
c. agree	3	2	2	4	11	2	3	4	3	3	15	26
d. strongly agree	2	2	1	2	7	1	0	0	1	1	3	10

6. Teaching teams should be abandoned.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	5	2	3	13	0	1	0	2	2	5	18
b. disagree	2	2	0	1	5	4	2	4	2	2	14	19
c. agree	0	0	1	1	2	0	0	1	2	0	3	5
d. strongly agree	0	0	2	1	3	0	0	0	0	0	0	3

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7. The action research group should study the educational value of "schools-within-a-school" and/or team teaching.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	1	0	0	0	1	1
b. disagree	0	0	1	1	2	0	1	1	1	0	3	5
c. agree	5	7	3	2	17	3	2	2	4	2	13	30
d. strongly agree	0	0	1	2	3	0	0	1	1	2	4	7

III. Leadership

1. House coordinators should be retained.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	1	0	0	2	3	0	0	3	2	1	6	9
b. disagree	0	3	2	1	6	0	1	1	1	0	3	9
c. agree	2	2	1	3	8	4	2	2	3	1	12	20
d. strongly agree	0	2	2	0	4	0	1	0	0	2	3	7

2. If there is to be system of house coordinators, there should be .... (how many?).

Academic teachers	Non-Academic teachers
a) One for each house	a) One for each house
b) One for each grade	b) One for each grade
c) Zero	c) Zero

3. Beginning next year, teachers, rather than administrators, should serve as department chairpersons.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	0	0	1	0	0	0	0	0	0	1
b. disagree	0	0	0	1	1	1	1	0	1	0	3	4
c. agree	0	2	2	2	6	3	2	4	2	2	13	19
d. strongly agree	4	4	3	3	14	0	1	3	3	2	9	23

4. Were it not possible to have teachers serve as both house coordinator and department chairperson, which would you prefer?

a. teachers in the house coordinator role 23

b. teachers in the department chairperson role 18

5. The action research team should study the educational benefits of house coordinators and/or department chairpersons.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	1	0	0	0	1	1
b. disagree	0	0	1	0	1	0	1	1	0	0	2	3
c. agree	4	6	3	4	17	3	2	3	4	2	14	31
d. strongly agree	0	0	1	1	2	0	0	2	1	2	5	7

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IV. Ability Grouping

1. Homogeneous grouping by ability for all classes is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	2	2	1	8	2	2	0	0	2	5	14
b. disagree	2	3	1	2	8	1	2	3	2	2	10	18
c. agree	0	1	1	1	3	0	0	2	2	0	4	7
d. strongly agree	0	1	0	1	2	1	0	1	1	0	3	5

2. Heterogeneous grouping by ability for all classes is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	1	0	1	5	0	1	0	0	2	3	8
b. disagree	2	5	1	3	11	2	1	5	4	1	13	24
c. agree	0	0	3	1	4	1	1	0	1	0	3	7
d. strongly agree	0	1	0	0	1	1	1	0	0	1	3	4

3. Some subjects demand homogeneous ability grouping.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	1	1	0	0	0	2	2
b. disagree	0	0	0	0	0	1	1	1	0	0	3	3
c. agree	3	4	4	4	15	2	2	2	3	2	11	26
d. strongly agree	2	2	1	2	7	0	0	3	2	1	6	13

If agree, which ones?

Academic teachers	Non-Academic teachers
a) Math	a) Math
b) English	b) English
c) Foreign language	c) Advanced math and English

4. At least some classes should feature heterogeneous ability grouping.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	0	0	0	0	0	0	1	1	0	0	2	2
c. agree	2	5	4	3	14	3	2	3	4	1	13	27
d. strongly agree	2	2	1	1	6	1	1	1	1	2	6	12

If agree, which ones?

Academic teachers	Non-Academic teachers
a) Specials	a) Specials
b) Social studies	b) Social studies
c) Science	c) Science

5. The action research group should research homogeneous and heterogeneous grouping schemes.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	1	0	1	0	2	0	1	0	0	0	1	3
c. agree	3	4	4	4	15	3	3	3	5	3	17	32
d. strongly agree	1	3	0	1	5	0	0	2	1	1	4	9

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V. Time Frame

1. Present 50 minute classes are ideal.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	1	1	1	1	0	0	0	2	3
b. disagree	0	3	0	2	5	2	2	0	1	1	6	11
c. agree	3	4	5	3	15	0	1	5	3	3	12	27
d. strongly agree	2	0	0	0	2	1	0	1	2	0	4	6

2. The perfect length in time for my class is . . . . minutes.

Academic teachers	Non-Academic teachers
a) All but two teachers said 45-50 minutes	a) Answers varied from 25 to 75 minutes About half said 60-70 minutes

3. The action research group should study class length.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	0	2	2	1	5	0	2	4	1	1	8	13
c. agree	3	4	3	3	13	2	2	0	4	3	11	24
d. strongly agree	2	1	0	1	4	2	0	2	0	1	5	9

VI. Other Scheduling Variations

1. Holding all classes in same order, every day is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	2	4	1	0	7	0	0	2	0	0	2	9
b. disagree	0	1	2	2	5	2	1	2	1	1	7	12
c. agree	3	1	2	2	8	2	3	2	4	1	12	20
d. strongly agree	0	1	0	2	3	0	0	0	1	1	2	5

2. The rotation of the order of classes each day is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	1	1	3	0	0	0	1	1	2	5
b. disagree	3	1	1	3	8	1	2	1	4	1	9	17
c. agree	1	2	1	2	6	2	0	3	0	2	7	13
d. strongly agree	1	3	2	0	6	0	1	2	1	0	4	10

3. Each team of teachers should be able to adjust the schedule to suit their needs to the greatest extent possible.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	1	0	1	1
b. disagree	0	0	2	0	2	0	1	1	0	0	2	4
c. agree	3	5	3	3	14	2	2	5	4	4	17	31
d. strongly agree	2	2	0	3	7	2	1	0	1	0	4	11

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4. The action research team should study the impact on learning of the static vs. the rotating order of daily classes.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	1	0	3	0	4	0	1	2	1	1	5	9
c. agree	3	5	2	3	13	3	2	3	4	3	15	28
d. strongly agree	1	2	0	1	4	0	1	1	0	0	2	6

VII. Prioritization of Research Topics

(Rank order)

______ Homogeneous vs. heterogeneous grouping

______ Schools-within-a-school

______ Team teaching

______ Value of house coordinator role

______ Value of department chairperson role

______ Effective length of classes (minutes per period)

______ Static vs. rotating scheduling

Academic teachers (top three)	Non-Academic teachers (top three)
a) Homogeneous vs. heterogeneous	a) Effective length of classes
b) Schools-within-a-school	b) Schools-within-a-school
c) Static vs. rotating schedule	c) Homogeneous vs. heterogeneous

Other Comments

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Appendix C

ACTION RESEARCH ON CHANGE IN SCHOOLS

May 1982

Preamble

In January, on our previous questionnaire, both academic and non-academic teachers ranked ability grouping (i.e., homogeneous and heterogeneous classes) and school within a school (i.e., teaming) among their top three priority issues for our research team to investigate. We would like to find out more about your perceptions of these issues by having you answer the questions below.

The responses are strictly confidential and only group results will be reported at a later date.

We appreciate your assistance.

Demographic Data

Your sex: ____ (1) male ______________________________

____ (2) female ______________________________

Marital status:

____ (1) single
____ (2) married
____ (3) divorced
____ (4) widowed
____ (5) other (please specify ______________________________)

If married, for how long have you been married to your current spouse?

____ years

If you have children, how many of them are now living with you?

____ children live with me

____ I have no children

Please check the highest degree you have received:

____ BA/BS
____ BA+15
____ MA
____ MA+15
____ MA+30
____ CAGS/2 MA

What is the subject area in which you teach? ______________________________
Grade level? ____________________

Number of years teaching at Portsmouth Junior High School? ______________
Total number of years teaching? ____________________

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Human Services Survey

	0	1	2	3	4	5	6	7
How Often:	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day	
How Strong:	Never	Very mild, barely noticeable			Moderate			Major, very strong

How Often 0-6 **How Strong 0-7** **Statements:**

1. ____ ____ I feel emotionally drained from my work.
2. ____ ____ I feel used up at the end of the workday.
3. ____ ____ I feel fatigued when I get up in the morning and have to face another day on the job.
4. ____ ____ I can easily understand how my students feel about things.
5. ____ ____ I feel I treat some students as if they were impersonal objects.
6. ____ ____ Working with people all day is really a strain for me.
7. ____ ____ I deal very effectively with the problems of my students.
8. ____ ____ I feel burned out from my work.
9. ____ ____ I feel I'm positively influencing other people's lives through my work.
10. ____ ____ I've become more callous toward people since I took this job.
11. ____ ____ I worry that this job is hardening me emotionally.
12. ____ ____ I feel very energetic.
13. ____ ____ I feel frustrated by my job.
14. ____ ____ I feel I'm working too hard on my job.
15. ____ ____ I don't really care what happens to some students.
16. ____ ____ Working with people directly puts too much stress on me.
17. ____ ____ I can easily create a relaxed atmosphere with my students.
18. ____ ____ I feel exhilarated after working closely with my students.
19. ____ ____ I have accomplished many worthwhile things in this job.
20. ____ ____ I feel like I'm at the end of my rope.
21. ____ ____ In my work, I deal with emotional problems very calmly.
22. ____ ____ I feel students blame me for some of their problems.

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Please indicate how you feel about the following statements:

A. Definitely agree; B. Agree; C. Maybe; D. Disagree; E. Definitely disagree

____ 1. Your current schedule best utilizes your talent as a teacher.

____ 2. Team teaching is beneficial for teachers.

____ 3. You have time to discuss student problems with a colleague.

____ 4. You have time to talk to other staff members.

____ 5. You have time to share ideas and materials with other staff members.

____ 6. There is time to make teacher-made materials and lesson plans.

____ 7. You have time to form lesson objectives and break them down into small steps.

____ 8. Your schedule provides planning time to accommodate individual differences among students.

____ 9. You like to be part of a teaching team.

____ 10. You prefer to work individually rather than with a team.

____ 11. Every teacher should teach reading.

____ 12. You prefer to teach at one grade level.

____ 13. Every teacher should have the same amount of planning time.

____ 14. Scheduling should permit a matchup between teachers' teaching styles and students' learning styles.

____ 15. Scheduling should be done so that class loads are relatively equal.

____ 16. You have been involved in scheduling decisions on teaming.

____ 17. You have been involved in scheduling decisions on heterogeneous and homogeneous grouping of classes.

____ 18. You are clear about the goals of teaming at Portsmouth Junior High School.

____ 19. You are clear about the goals of homogeneous and heterogeneous grouping of students at PJHS.

____ 20. You are satisfied working with the present members of your team.

____ 21. You are satisfied with the present homogeneous and heterogeneous grouping of students.

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Appendix D

17 March 1982

I am a member of a Collaborative Action Research Team that is funded by the National Institute of Education. On the team there are five teachers from my school, plus a research graduate student, and a professor from the University of New Hampshire. The project started in September of 1981 and is a two-year project. We are conducting research on concerns which we have defined as important for our school.

We have conducted a survey of the teaching staff and administrators in our school to determine their priority concerns. Most of their concerns relate to scheduling inadequacies. Some of the concerns deal with heterogeneous vs. homogeneous groupings. Presently, our school groups students homogeneously for advanced math and advanced English. Our staff would like to find better ways of grouping students homogeneously, without creating very low groups in all subjects.

Our school presently has students placed in "schools within a school." This concept means that teams of teachers share a common group of students. We would like to maintain this concept but also allow for students to have individual schedules.

Simultaneously, we would like to expand on our homogeneous groups, keep "schools within a school," and also allow individual student schedules to exist.

Do you know of schools that have been successful with some or all of these areas? If so, would you kindly forward pertinent information to me (name of school, address, phone, and contact person), so that I may set up visitations with these schools. Please feel free to call me, if you wish.

Thank you very much for your cooperation.

Sincerely,

Jack D. Parte
New Hampshire

New Hampshire Team Report

ARCS Report XI

unh
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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT XI

ACTION RESEARCH ON CHANGE IN SCHOOLS: THE RELATIONSHIP BETWEEN TEACHER MORALE/JOB SATISFACTION AND ORGANIZATIONAL CHANGES IN A JUNIOR HIGH SCHOOL

New Hampshire ARCS Team

Sharon N. Oja
Gerald J. Pine
Principal Investigators

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STATEMENT OF THE PROBLEM

The New Hampshire Action Research on Change in Schools (ARCS) team began the 1981-1982 school year discussing problems in education and in their own school in particular. Many of the concerns we identified (e.g., homogeneous vs. heterogeneous grouping, school-within-a-school, class length, house coordinators vs. department chairs) fell into the broad category of scheduling, an area which affected teaching and learning conditions in the school. Preliminary investigation into the issue of scheduling and organizational changes made by a new principal led us to refocus on a narrower issue related to scheduling and to the concerns raised above. We chose to investigate the relationship between school staff job satisfaction/morale and a number of organizational changes/practices occurring at the Portsmouth Junior High School (PJHS).

STATEMENT OF THE QUESTION

Our research question evolved during the first eight months of the project, paralleling our decisions about a researchable problem. We initially chose to research the question, "How can we make scheduling changes to improve teaching and learning conditions at PJHS?" We focused particularly on the issues of homogeneous vs. heterogeneous grouping, class length, school-within-a-school or teaming, department chairs vs. house coordinators, and flexible or modular scheduling as factors which might affect staff morale, communication and student learning.

Preliminary data collection and analysis as well as further discussion of these concerns caused us to focus more specifically on the relationship between staff morale and several organizational practices in the school. We then identified several research questions which addressed this problem.

1. Do organizational changes effected between 1981-82 and 1982-83 at the junior high school (see Appendix A) affect school staff morale/job satisfaction?
2. Do organizational changes at the junior high school affect school staff's perceptions of teaming, grouping of students, communication with colleagues and administration, time management, and teaching assignment?
3. Is goal clarity and involvement in policy decision making related to staff morale/job satisfaction?

REVIEW OF RELATED LITERATURE

The literature reviewed in this section was identified by conducting ERIC searches utilizing the following descriptors: middle school/junior high scheduling, flexible scheduling, house plan, homogeneous/heterogeneous grouping. Additional relevant materials on teacher morale/job satisfaction were reviewed from a second ERIC search and from additional readings over the year.

Junior High Scheduling

During our initial ERIC search, the following articles provided the team with information about schedule issues faced in other schools and communities. Once the team shifted its focus to the issue of teacher morale, these articles were less directly relevant.

Ray Costantino and Charles Larue (1974) described a program for middle school science which included a team approach and a three year rotation. The science teacher on the ARCS team felt the PJHS science program was more adequate.

Donald W. Johnson (1976) reported on developing and implementing an effective student and teacher assignment schedule. Johnson gave information about strategies for collecting information which would lead to a workable schedule for students, teachers, and administrators. The article included sample schedules, parent survey, assessment graphs for math and reading tests, profiles of district performance and state performance in testing program. Because the school context described by Johnson seemed to include many of the same issues the PJHS action research team was exploring, this article was very pertinent to our original research question.

In James Cole's (1975) paper, variable junior high school schedules were developed to inject variety and expanded course offerings in the traditional daily schedule. This report presents tables, figures, and diagrams which explain the Racine, Wisconsin junior high school variable scheduling plan. Sample student schedules, programs of studies, the rotation cycle, and comparisons with traditional scheduling are included. The new principal at PJHS kept a copy of this article because of its clarity in the mechanics of scheduling.

In Gary, Indiana at the Edison Middle School a new placement and grouping system is being used in math (Dongu, 1979). Math tests were sorted according to the lowest math skill not mastered by each student. Students were then placed in special classes devoted entirely to one specific math skill. No attention was paid to grade levels in these classes. When the citywide checkpoint exam was administered the following spring to all seventh and eighth graders, Edison scores were the best in the city. Results like this seem to present a strong argument for grouping according to achievement levels in math rather than math grouping within grade levels as is currently being practiced at PJHS.

The effect of class heterogeneity in junior high school English classes was investigated by Carolyn M. Evertson, Julie Sanford and Edmund Emmer (1981). The data cited in this study was collected from 27 junior high school English classes in a large metropolitan school district. Variables of degree of homogeneity, classroom management, adaptation of instruction to individuals, and student task engagement and cooperation were studied. Findings suggest that extremely heterogeneous (English) classes appear to have limitations in student achievement and task engagement and cooperation of students which are related to the teacher's classroom management skill and adaptability to student's needs. These authors suggest that extremely heterogeneous classes are less than ideal for a learning environment. These last two articles are helpful to the ARCS team because Portsmouth Junior High

School's administrators' and teachers' scheduling objectives are moving from extreme heterogeneous grouping in all subjects to top students in math and English being homogeneously grouped within grade level (see SOS questionnaire results in Appendix B).

Teacher Morale and Scheduling

Several themes of the ARCS team's discussions of our school context were in the areas of lack of communication, low teacher morale and teacher's lack of satisfaction in their ability to do a good job. Members of the team became increasingly interested in these issues and their relationship to the project's initial focus of scheduling.

A review of the literature indicates that the most current work in teacher morale is being researched under the focus of stress in teaching. An article by Elizabeth S. Manera and Robert E. Wright (1979), "Stress Factors in Teaching," had three groups of teachers participate in a Q-sort of 14 stress factors related to their job field. The broad concept of communication seemed "embedded in the top four items selected by the participants." Although classroom management and discipline are mentioned as top concerns of teachers in current articles these authors suggest that "perhaps communication or the lack of communication tends to cause more stress among educators. . .."

Additional articles on teacher stress which were reviewed focused on the new concept of teacher "burnout": Who are our burned out teachers? How can we identify stress leading to burnout? What elements in a teacher's job definition or the context of the school may contribute to stress leading to burnout? How does teacher stress show up in attitudes toward students and students' learning? (Iwanicki & Schwab, 1981; Schwab & Iwanicki, 1982a, 1982b; Schwab, 1982).

Schwab and Iwanicki (1982), in describing who are our burned out teachers, state first, a major aspect of burnout is the development of feelings of emotional exhaustion and fatigue. A second major aspect is the development of negative attitudes toward the people with whom the affected people work. The third aspect is the loss of the feelings of accomplishment derived from the job. These three ways in which professionals encounter stress result from the constant and intensive involvement with people and can lead to a loss of care and commitment which is not characteristic of their original attitudes.

Causes of Stress and Burnout

A number of recent studies and articles describe causes of teacher stress.

Sparks (1979) suggests the major causes of teacher stress are: (1) high involvement and limited power, (2) the nature of the inter-personal relationships in the school, and (3) teacher perceptions of role conflicts. The interaction of these factors may be important in describing reasons for high teacher stress. The ARCS team examined some of these issues in its surveys and interviews.

Scrivens (1979) suggests most burnout exists in teachers who have worked for more than 10 years. In PJHS sample, 50% of the teachers have more than ten years of experience.

F. C. Ellenberg (1972) reviewed the factors affecting teacher morale and summarized the major conclusions drawn from several studies:

1) student achievement increased under teachers with high morale and decreased under teachers with low morale
2) teacher morale assists in establishing "school character" or climate
3) the more democratic the school administration, the higher the morale (Burkett, 1965)
4) salary affects level of morale for some teachers and not others
5) personal factors are most important in determining an individual's level of morale
6) teacher's relationship with principal is a key non-personal factor (Hood, 1965)
7) teacher participation in administrative decisions is related to morale (Leiman, 1961)

Ellenberg concludes by suggesting that administrator's attitudes, policies, procedure, understanding of teachers, and philosophical approach to problems are a major factor in teacher morale.

Kathleen Booher (1978) reacts to "middle school melancholia" and says junior high/middle school teachers are made to feel like losers for the following reasons:

1) they are neglected by central administration
2) administrative decisions are made witout considering these teachers
3) administration focuses on what high school teachers think junior high/middle school teachers should teach
4) administration minimizes importance of junior high/middle school
5) there is no recognition of junior high/midle school teacher accomplishments.

Booher calls for administrative support for junior high/middle school teahers to improve teacher morale.

In Douglas Heath's (1981) summary of his extensive research on faculty burnout, morale and vocational adaptations, he states that teacher morale may be deteriorating because the intrinsic rewards for teaching are lower now than they used to be. High job morale comes from an optimal relationship between job adjustment and personal fulfillment. Teachers in the past had higher vocational adaptation, despite low job salaries because they got intrinsic rewards from helping children develop, receiving community and parent respect, achieving personal fulfillment. It is these intrinsic values in teaching which are lower today: children are harder to teach, parents and community give less respect, and teachers feel they are realizing less of their potential. Thus, teacher morale remains low even as salaries go up.

In a recent NEA-NOW newsletter (March 14, 1983) David Lipsky of the New York State Industrial Labor Relations, Cornell University, stated that "There's no evidence that promise of extra pay improves a teacher's classroom performance. Most teachers do their best regardless of the circumstance." The same newsletter reported that research has shown, however, that teachers' experience and education is positively related to student achievement.

Manera and Wright (1979) suggest that recognizing stressors is a major factor in successfully dealing with job stress. In their research in teaching, 14 categories were ranked by participants to show how much stress the item produced in their life. 91 educators, two classes of graduate classroom teachers, and public school administrators rated time management, individualized instruction, and judging people as the most stressful factors in teaching. Accepting and using other people's expertise and building a professional reputation were listed as least stressful.

School Climate, Organizational Structure and Teacher Morale

A number of studies relate the organizational structure and school context to teacher morale.

Dennis (1973), in an exploratory analysis of school climates, reviewed past studies on morale and lists the following major conclusions as factors affecting morale in the schools:

1) Morale is a function of many interrelated variables.
2) There is a lack of instruments to measure morale.
3) The immediate supervisor/administrator is important to a teacher's morale. A democratic administration can offset other factors which typically produce low morale.
4) Congruity of perceptions and expectations or lack of it between school boards and teachers is important to teacher morale.
5) Administrators and teachers often have different views of levels of morale and what is important to teachers morale. A larger discrepancy between their expectations results in lower morale.
6) Preparation programs for teachers which develop, or fail to change, unrealistic attitudes about teaching result in low morale.
7) Research needs to be done on the relation of teacher morale to teaching performance and to administrative personnel policies and practices in the school.

Dennis then went on to study two junior high schools - one with and one without morale problems. He utilized four instruments, two for students, one on self esteem and one on school atmosphere, and two for teachers, one on how staffs feel about co-workers and supervisors, and a second instrument measuring how satisfied they are with the degree of participation and recognition received from their work.

Specifically, the teacher instruments measured:

"supportiveness" - a person's feelings that she/he is accepted, respected, and encouraged to function as a competent, effective individual
"change leadership" - a person's feeling that there is a sincere concern to find, develop and implement better ways of doing high quality work.

Dennis concludes that there are five aspects of the work situation that are related to teacher morale:

Work planning and coordination
Work productivity
Work incentive (i.e., salaries, benefits which are adequate)
Work environment
Work resources - setting (sufficient to do an adequate job)

William C. Miller (1981) discussed staff morale, school climate, and educational productivity. His comments can be grouped in four major areas as he reviewed the research findings:

1) The social climate of school and staff morale can affect student attitudes and learning
2) Administrative behavior can be important in facilitating positive staff morale and he cites the following behaviors:

   - praising and giving support
   - supporting teacher in conflicts with students and parents
   - giving attention to teachers' physical comfort
   - assuming responsibility for administrative actions
   - demonstrating knowledgeability about current practices and strategies
   - encouraging teachers' professional growth

3) Research shows an open climate vs. closed climate can affect student attitude toward learning and problem solving ability. Administrators play an important role in establishing the positive climate.
4) In particular, Miller cites the research of Aspy and Roebuck (1974) showing that "teachers can change when they work in situations with high levels of facilitative conditions."

Schambier (1981) cites the organizational structure of school decision making as a major source of teacher stress and burnout in an article entitled: "What to do when the Pyramid Crumbles: The Path from XA+YB Leadership." Schambier suggests that teachers burnout because all decisions are usually made by administrators rather than by or in collaboration with teachers. Teachers are then expected to carry out those decisions.

Sandra Kurtz (1980) presented an annotated bibliography on teacher stress and burnout. Studies and articles particularly relevant to the present study are summarized below.

Moe (1979) sets individualistic sources of counteracting burnout. He suggests that teachers should:

- exercise
- leave their teaching at school
- develop a hobby
- get plenty of sleep
- keep a diary
- learn to say no
- set realistic and flexible goals
- take a sabbatical or leave of absence

William Bosher, Jr. (1978) expresses an additional point of view. He says that junior high/middle school teachers must be their own advocates to fill in the information void about junior high/middle schools. Bosher admits the pressing need for outside recognition but also distinguishes the necessity of a positive self-image and a sense of worth on the part of teachers. Finally, Bosher points to the interdependence of elementary, junior high and high school curricula with all groups participating equally in decision making from their own knowledge and experience bases.

Many articles in the literature suggest only individualistic ways teachers can cope with stress. It is important to note that ARCS questions about change in scheduling as related to stress is a different approach which takes into consideration the larger context of the school environment and school organizational structure.

Reed (1979) suggests ways principals can help prevent burnout in teachers as follows:

- build self-esteem
- involve teachers in decision making
- communicate with each member of the staff
- push for professional growth
- promote skeptical and mental well being
- offer release time
- involve parents in the learning process

Flint (1982) brought up three areas for discussion; two of the reviews seem important to ARCS research in teacher morale and job satisfaction. First, he discusses tests for stress and burnout, and then he points to school organizational development and areas of the work environment that can be manipulated to create job satisfaction.

First, Flint reviews the history of stress burnout research since the 1970s. His definition of "eustress" to mean good or positive stress is helpful because it recognizes that teaching, as a human service organization, involves a certain amount of stressful conditions which encourage teachers to continually challenge themselves in the search for better teaching strategies. This "eustress" is positive for teacher and student learning. Then, Flint gives concise examples of different kinds of measures for stress and their pros and cons. His summary reinforced the ARCS team decision to use the newer Maslach and Jackson measure for stress and burnout. This instrument will be discussed in the Design section of this report.

Finally, Flint asks a number of important questions related to the organizational development of the schools and the areas of the school work environment that can be manipulated to create teacher job satisfaction. These are:

- quality of leadership
- advancement opportunities
- level of job security
- physical and psychological work climate
- job demands
- decision making latitude

One member of the team studied the following survey instrument considered for use in collecting data on teacher morale and job satisfaction. These were the Leadership Behavior Description Questionnaire (LBDQ), the Organizational Climate Description Questionnaire (OCDQ), the Job Satisfaction/Dissatisfaction Questionnaire, and the Minnesota Teacher Attitude Inventory (MTAI). This teacher recommended that the ARCS team use the Maslach Burnout Inventory (Human Services Survey) designed by Christina Maslach and Susan Jackson and validated with teachers by Richard Schwab and Edward Iwanicki (1981). She cited a number of reasons which convinced the team of the value in using the Human Services Survey to gather information for this part of the research plan.

This review of the literature was undertaken as the ARCS team discussed the general issue of school scheduling and then focused on teacher morale/job satisfaction as it existed at PJHS and was related to teaching and learning conditions in the school. The next section describes the design of the study on teacher morale and job satisfaction.

RESEARCH DESIGN/METHODOLOGY

Selection of Research Strategies and Framework

The team considered many factors before choosing a design framework: time factors (length of project and personal time), team members' familiarity with research procedures, appropriateness to study the school context, and exploration of research question and subquestions. Discussion of research design centered around the research and development and the evaluation frameworks (Borg & Gall, 1981).

The ARCS team finally decided that an evaluation design would be the best choice. Within this framework, the team undertook a descriptive case study of Portsmouth Junior High School, the school philosophy, and the match between the philosophy (goals, objectives, and junior high priorities) and the scheduling practices related to teacher teaming and student ability grouping. The ARCS team described the current school context and philosophy and current practices. The team analyzed the strengths and weaknesses of current practices in light of teacher morale, job satisfaction, and feelings of accomplishment in student learning. We will make recommendations which will be 1) consistent with our operational definition of what a junior high school is and 2) substantiated by our surveys and literature review.

Site and Participants

The New Hampshire team is located at an urban junior high school which serves 680 seventh and eighth graders. The school population includes students from a variety of socio-economic backgrounds and students from nearby U. S. Air Force and Naval bases. Of the school's 680 students, 15% qualify as economically disadvantaged under Title I, and approximately 7% are Black, Indian, Hispanic, or Asian.

The school staff tends to be experienced and stable. Of the fifty-two full-time staff members, forty-two have taught at this school for more than four years. About half of the staff have taught for four to eleven years; the other half have taught for twelve or more years. In September, 1981, the school principal resigned and accepted an assistant superintendency elsewhere. The new principal, appointed in November, 1981, was a former mathematics teacher and house coordinator at the junior high school.

In 1975, the school principal organized the junior high into four houses, or schools-within-a-school. Each house consisted of teachers from the four major academic subject areas, a house coordinator (also a part-time teacher), and a group of students. In 1980, because of declining enrollment and reductions in staff, students and teachers were assigned to three rather than four houses. In 1982, house coordinators were replaced by department chairs in an attempt to address central office concerns about curriculum development. Academic teachers continued to meet weekly with their house, in meetings run by either the principal or the assistant principal. At present, houses have fewer disciplinary or academic responsibilities than they did in the past. (For more school history, see Appendix C.)

In 1981-82 48 out of the total staff of 52 responded to the survey. Between the pre-test and the post-test nine of the teachers left the school. Thus, of 52 total school staff in 1982-83, 48 of 51 responded to the second survey.

All teaching and administrative staff 1981-82 and 1982-83 from a New Hampshire junior high school participated in this evaluation study. The staff ranged from 3 to 33 years of experience (see Table 1).

TABLE 1

Description of Portsmouth Junior High School Staff, 1981-82, 1982-83

1981-82 School Staff

Total in School	Number Responding to Survey Spring 1982	Subject Taught
6	6	English
8	8	Math
6	5	Science
6	6	Social Studies
8	8	Shop(4) & Home Ec(4)
6	6	Music(2), Art(2) & Phys Ed(2)
6	5	Guidance(2), Admin(2), Nurse(1), Libr(1)
6	4	Spec Ed, Reading(4)
52	48	

Years of teaching experience*:
1 staff had taught 0- 3 years
22 staff had taught 4-11 years
22 staff had taught 12+ years
*3 responses not codable

1982-83 School Staff

Total in School	Number Responding to Survey Fall 1982	Subject Taught
6	6	English(6)
7	8*	Math
6	4	Science
6	6	Social Studies
8	7	Shop(4), Home Ec(4)
6	5	Music(2), Art(2) & Phys Ed(2)
6	6	Guidance(2), Admin(2), Nurse(1), Libr(1)
6	6	Special Ed & Reading
51	48	

*One mathematics teacher left the school but responded in Year 2 to the HSS.

Data Collection

Kinds of Data to be Collected. In order to answer the research questions posed at the beginning of this paper, we collected data from all school staff at Portsmouth Junior High School concerning their opinions of the schedule and teaming and ability grouping practices. We also collected self report measures of staff emotional exhaustion, negative attitudes toward students, and feelings of personal accomplishment using the Human Services Survey (Maslach Burnout Inventory). Data collection took place in May, 1982 and again in December, 1982 to enable us to analyze the strengths and weaknesses of current practices as well as organizational changes which occurred in September, 1983. The following data were collected as summarized in Table 2.

Research question #1: Do organizational changes effected between Year 1 and Year 2 affect school staff morale/job satisfaction scores on the HSS?

Data: 1) Levels of emotional exhaustion, depersonalization (negative attitude toward students), and personal accomplishment of PJHS school staff. These are the three subscales of the Human Services Survey.

Research question #2: Do organizational changes at the Junior High affect school staff's perceptions of: a) teaming, b) job satisfaction, c) communication with colleagues, d) communication with administration, e) time management and f) teaching assignment.

Data: 2) PJHS staff opinions about teaming and homogeneous/heterogeneous grouping practices and staff perceptions of the relation of these variables to job satisfaction, level of morale, and student learning.

Research question #3: Is goal clarity and involvement in decision making related to staff morale/job satisfaction scores on the HSS?

Data: 3) PJHS staff's HSS scores on all three subscales grouped into thirds: high, moderate and low. Responses of staff in each third on the issues of communication with administration (goal clarity and involvement).

Data Collection Procedures. The team used the following data collection procedures:

a) Teacher members of ARCS team divided staff and conducted personal surveys with PJHS staff December, 1981 on scheduling practices and concerns. This survey was entitled Staff Opinion Survey.
b) Staff of PJHS were surveyed in May of 1982 and again in December of 1982 on: 1) scheduling practices and changes in teaming and ability grouping and 2) job satisfaction/morale.

TABLE 2

Data Collection and Analysis

search Question	Data Source	Kind of Data	Date
What are staff scheduling concerns?	Staff Opinion Survey (SOS)	Staff Opinion on scheduling practices (Appendix B)	December 1981
Do organizational changes at PJHS affect staff morale/job satisfaction?	- Human Services Survey (HSS)	- Levels of emotional exhaustion depersonalization, and personal accomplishment of school staff (Appendix D)	May 1982 (pre) December 1982 (post)
	- School documents	- List of organizational changes (Appendix A)	September 1982
Do organizational changes at PJHS affect staff perceptions of teaming, job satisfaction, communication with colleagues and administration, time management and teaching assignment?	- School Survey (SS)	- Staff opinions about teaming, job satisfaction, communication, with colleagues and administration, time management, teaching assignment (Appendix D)	May 1982 (pre) December 1982 (post)
	- Teacher interviews	- Same (Appendix E)	October 1982
Is goal clarity and involvement in decision making related to staff morale/job satisfaction?	- HSS	- Scores divided into high, moderate and low thirds	May 1982 (pre) December 1982 (post)
	- SS	- Staff opinions about goal clarity and decision making (communication with administration)	December 1982 (post)
	- Interview with principal	- School philosophy and scheduling practices at PJHS	May 1982
	- Teacher interviews	- Teacher perception of school philosophy and goals	October 1982

TABLE 2 (continued)

Data Collection and Analysis

earch Question	Analysis Procedure
	Tabulated responses
	Correlated t-test
	5 point Likert scale collapsed to three groups: agree/disagree/undecided Percentages of agree/disagree/undecided calculated for each of 21 School Survey questions Percentages in May 1982 data compared to December 1982 data Teacher interviews, transcribed and coded to correspond to six groupings of SS questions
	HSS responses divided into thirds: HI, MODERATE, LOW - Percentages of agree/disagree/undecided on 21 SS questions calculated for all staff in HI HSS group - Percentages of agree/disagree/undecided on 21 SS questions calculated for all staff in MODERATE HSS group - Percentages of agree/disagree/undecided on 21 SS questions calculated for all staff in LOW HSS group - Percentages of agree/disagree in HI HSS group were compared with LOW HSS group for each SS question - Interviews transcribed and coded to correspond to six groupings of SS questions

c) Literature was reviewed to investigate if teacher morale was linked to scheduling.
d) A description was written of the history of the policies and decisions related to scheduling practices in the last 10 years at Portsmouth Junior High School.
e) A list was made of organizational changes at Portsmouth Junior High School between Year 1 and Year 2 of the study (Appendix A).
f) The principal was interviewed about the school philosophy (goals, objectives, and junior high priorities) and scheduling practices at Portsmouth Junior High School.
g) Interviews were conducted with randomly selected teachers on their perceptions of school philosophy and goals, scheduling practices of teaming and grouping, and the effects of these practices on the teaching and learning environment in the school.

Data Sources

Staff Opinion Survey. We developed a questionnaire called the Staff Opinion Survey (SOS) (see Appendix B) in order to solicit staff opinions on scheduling practices. The team randomly divided all staff into five groups to be surveyed. A numbering system 1-5 was repeated over and over on an alphabetical list of all staff until each staff person was matched to a number. One team member surveyed all "1s," a second team member surveyed all "2s," etc. The SOS was personally administered to each staff member by a member of the team. This approach resulted in a high response rate.

From the survey results, the ARCS team identified four primary areas of concern:

homogeneous vs. heterogeneous grouping of students
schools-within-a-school teaming practices
class length
house coordinators vs. department chairs

School Survey. A School Survey of 21 questions was designed by the team and used to gather school staff opinions on issues of teaming, grouping of students, communication with colleagues and administration, time management, and teaching assignment (see Appendix D). The purpose of the School Survey was to determine whether school staff agreed or disagreed with current school practices in these areas. This survey was adapted from the Norup Teacher Survey (1982) on the basis of the areas of concern identified in the SOS. Questions on involvement in decision making and clarity about goals were added to reflect our teams' concerns. This survey was given during Year 1 and Year 2; in May 1982, just before the close of school in June and December 1982, between Thanksgiving and Christmas. These were considered equally stressful times in a teacher's school year. The pre-post-test administration allowed for comparison in rates of agreement.

To ensure a good response, team members individually contacted staff members to ask for their participation. This personal contact resulted in 48 responses from 52 staff in June 1982 and 48 responses from 51 staff in December 1982.

In the December 1982 School Survey one additional question was asked referring to a recent increase in salary (1982-83). This question was asked to see if an average pay increase of 6% would affect teacher morale/job satisfaction.

Human Services Survey. The Maslach Burnout Inventory (MBI) was chosen as the index of perceived stress (burnout) in our population of junior high school staff (see Appendix D). A cross-validation study of the MBI (Iwanicki & Schwab, 1981) indicated internal reliability based on the frequency and intensity subscales for teachers was consistent with reliability for helping professions. This survey was given to staff with the School Survey in May and December, 1982.

School History. During initial discussions of school context, one team member compiled a history of school changes covering the previous ten years. This history provided a useful focus for our understanding of how change had occurred. Since there was no existing file kept by the school, the documentation came from memos, agendas, but mostly collective staff memories. In September, 1982, the school history was updated to include organizational changes occurring at that time. The school history is outlined in Appendix C.

Interview with New Principal. Two members arranged an interview in May 1982 with the new principal in order to elicit his description of the school philosophy, goals, objectives, and scheduling priorities of PJHS and his working definitions of terms such as teaming and grouping.

Interview with Teachers. Six teachers were interviewed in depth for the purpose of probing their view and understanding of school goals, organizational changes, teaming, and grouping of students (questions asked are listed in Appendix E). Staff members chosen to be interviewed had HSS subscale scores which were high or low in relation to other staff members.

The interviews were transcribed, and passages were used to illustrate or question the trends found in the quantitative data. In addition, when questions arose in the data analysis, we were able to go back to the interviews for more clarification.

Data Analysis

School Survey Q-Sort. Responses on the pre- and post-test were grouped into total number of respondents and repeaters. Repeaters were identified as school staff having completed both Spring and Fall Surveys. Several research team members independently identified groupings for School Survey questions. The total research team gave consensual agreement resulting in groupings: teaming, job satisfaction, communication with colleagues and administration, time management and teaching assignment. These groupings of questions are used for convenience in data analysis and are not to be considered subscales as the HSS subscales have been defined and validated. The 5 point Likert Scale responses for each question in the six groups of questions were collapsed into agree, disagree, and undecided. Percentage of respondents in each category were computed for pre- and post-test for all responders and for repeaters. It was noted that there were 10 changes in school staff membership between Spring and Fall. Some School Survey and HSS responses were incomplete while a few others chose to respond to either the Spring 1982 or Fall 1982 survey but not both.

Computer Program. The pre- and post-testing of 57 total respondents generated an overwhelming data base. One team member developed computer programs to facilitate the analyses. The program helped the team to perform the analyses summarized in Table 2.

FINDINGS

Overview

The first activity of the New Hampshire ARCS group was to survey the school's staff for the purpose of identifying the major educational concerns. The plan was to develop an appropriate research question based on the concerns we would discover. The team developed the Staff Opinion Survey (SOS) to identify teacher opinion on current scheduling practices at PJHS.

The key issues of concern uncovered by the SOS were homogeneous vs. heterogeneous ability grouping of students, class length (time), schools-within-a-school, teaming, and department chairpersons vs. house coordinators. Scheduling was selected as the focus for research at this point because it encompassed all these areas.

The next step was to state a research question in terms of scheduling. The research group's efforts toward this end were lengthy, difficult, and ultimately fruitless. Eventually, it was decided to pursue the research from a different point of view. Teacher morale had been discussed over and over in terms of the school context and seemed related to the issues of concern listed above. The ARCS team discovered that research questions could readily be stated with teacher morale as the focus. Teacher morale, then, was adopted as the theme for the project.

Changes were effected at PJHS between Year 1 and Year 2 of the ARCS study (see Appendix A). It seemed natural to expect that these changes might be accompanied by changes in staff approval/disapproval of the school organization and by changes in the level of staff morale/stress. The ARCS team decided to collect evidence to determine the level of any change in staff opinion and stress/morale level. Separate, simultaneously administered instruments were used to collect the desired data.

Morale/job satisfaction was measured using the Maslach Burnout Inventory (Maslach & Jackson, 1981) commonly referred to in surveys as the Human Services Survey (HSS). To determine staff perceptions of the teaching/learning environment, the ARCS team created an instrument labelled the School Survey (SS). The SS is a collection of 21 statements requiring a Likert response ranging in 5 points from definitely agree to definitely disagree. The statements selected were based on the areas of concern identified by the SOS.

The HSS and the SS were administered once during Year 1 of the ARCS project (pre-test) and again during Year 2 (post-test). Findings based on the information generated by these instruments are given in the subsections below. Various organizational changes (see Appendix A) distinguished Year 1 from Year 2. An important phase of our study is the comparison of the HSS and SS pre-test results (Year 1) against the post-test results (Year 2). It was expected that the changes would be parallelled by shifts in the level of teacher morale and new patterns of staff opinion regarding the issues of concern in school organization. The purpose of this section of the report is to summarize the actual findings.

For the purpose of clarity the SS items were sorted according to these categories: teaming, communication with colleagues, communication with administration, time management/planning, grouping of students, and teaching assignment. Trends in the collected data are noted in this section. Interpretation follows in the Conclusions section.

Research Question #1: Do organizational changes at the Junior High School affect school staff morale/job satisfaction?

A correlated t-test on each of the HSS subscales (see Table 3) indicated no significant change in the school staff who took both the 1981-82 and 1982-83 tests (the repeaters). Specifically, on the Emotional Exhaustion frequency subscale, teachers taking both pre- and post-tests there were no differences in the extent to which these teachers felt emotionally drained and "used up."

On the Personal Accomplishment frequency subscale, our junior high staff who took both pre- and post-test did not show differences in the extent to which they feel competent and successful in their job from 1981-82 to 1982-83.

On the Depersonalization subscales, both frequency and intensity, there were no differences in the staff taking both pre- and post-tests. The group of repeaters at the junior high school shows no difference between 1981-82 and 1982-83 in the extent to which they have developed feelings of callousness, cynicism, and insensitivity toward students.

Comparison of the junior high school morale/job satisfaction scores on the HSS with a group of Massachusetts teachers (Iwanicki & Schwab, 1981) and a group of New Hampshire NEA teachers (Schwab, Jackson & Schuler manuscript in progress) shows that the mean scores are similar (see Table 4).

Research Question #2a: Do organizational changes at the junior high affect school staff's perceptions of teaming?

Three questions on the School Survey referred to teacher participation on a team (questions 3, 9, and 10). On both the pre-test and post-test most teachers agreed with the statement "team teaching is beneficial to teachers." There was no difference in the pattern of response in the repeaters group (see Table 5).

TABLE 3

Subscales of Maslach Burnout Inventory*

A. Emotional Exhaustion

1. I feel emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel fatigued when I get up in the morning and have to face another day on the job.
6. Working with people all day is really a strain for me.
8. I feel burned out from my work.
13. I feel frustrated by my job.
14. I feel I'm working too hard on my job.
16. Working with people directly puts too much stress on me.
20. I feel like I'm at the end of my rope.

B. Depersonalization

5. I feel I treat some students as if they were impersonal objects.
10. I've become more callous toward people since I took this job.
11. I worry that this job is hardening me emotionally.
15. I don't really care what happens to some students.
22. I feel students blame me for some of their problems.

C. Personal Accomplishment

4. I can easily understand how my students feel about things.
7. I deal very effectively with the problems of my students.
9. I feel I'm positively influencing other people's lives through my work.
12. I feel very energetic.
17. I can easily create a relaxed atmosphere with my students.
18. I feel exhilarated after working closely with my students.
19. I have accomplished many worthwhile things in this job.
21. In my work, I deal with emotional problems very calmly.

*Items as amended by Schwab (1980) to reflect the teaching profession. From Iwanicki and Schwab (1981).

High degrees of burnout are reflected in high mean scores on A and B and a low mean score on C.

TABLE 4

Comparison of ARCS and Other Maslach Burnout Inventory Subscale Statistics

	Emotional Exhaustion				Personal Accomplishment				Depersonalization			
	ARCS pretest	ARCS posttest	Iwanicki & Schwab*	Schwab Jackson Schuler**	ARCS pretest	ARCS posttest	Iwanicki & Schwab*	Schwab Jackson Schuler**	ARCS pretest	ARCS posttest	Iwanicki & Schwab*	Schwab Jackson Schuler
Frequency												
Number of items	9	9	9	9	8	8	8	8	5	5	5	5
Mean	19.06	19.64	22.30	22.63	36.26	36.74	37.36	38.01	7.35	6.79	7.40	6.92
Standard deviation	10.68	12.18	11.63	10.61	6.73	6.10	6.[illegible]	6.36	5.60	5.94	6.25	5.60
N=	33	33	469	227	35	35	469	227	34	34	469	227
Intensity												
Number of items	9	9	9		8	8	8		5	5	5	
Mean	25.84	26.94	29.74		39.09	39.72	41.63		9.55	10.48	9.25	
Standard deviation	12.66	15.68	13.45		7.29	6.30	7.09		7.21	8.52	7.35	
N=	32	32	469		32	32	469		33	33	469	

*Iwanicki and Schwab (1981) Massachusetts teachers (grades 1-12)

**The New England Educator's Study, Schwab, Jackson, and Schuler. Manuscript in process. (NEA New Hampshire public school teachers randomly selected members from grades 1-12)

TABLE 5

School Survey Responses on Teaming

2. Team teaching is beneficial for teachers.

Total	Agree	Disagree	Undecided
pre (n=45)[1]	78%	4%	11%
post (n=44)	70%	8%	22%
Repeaters			
pre (n=34)[2]	81%	6%	13%
post (n=34)	73%	8%	19%

9. You like to be part of a teaching team.

Total	Agree	Disagree	Undecided
pre (n=42)	74%	14%	12%
post (n=43)	63%	14%	23%
Repeaters			
pre (n=33)	76%	15%	9%
post (n=34)	62%	15%	24%

10. You prefer to work individually rather than with a team.

Total	Agree	Disagree	Undecided
pre (n=42)	21%	64%	14%
post (n=46)	22%	53%	24%
Repeaters			
pre (n=34)	24%	71%	6%
post (n=36)	25%	53%	22%

[1] Total number of pre-test and post-test respondents is 48. Numbers of n presented here and in later tables reflect the resulting n after subtracting those who did not respond to this particular survey item.

[2] Total number of repeaters is 38 for each question. Numbers given here and in the following tables reflect the resulting n after subtracting those who did not respond to a particular survey item.

All of the teachers who disagreed (two people on pre-test and three on post-test) were science teachers. Five of the six science teachers completed the survey. This disagreement by half the science department may be due to their idea of teaming. The science department had a successful team department at one time. Presently teams are interdepartmental; the science teacher on the research team suggests that some science teachers may prefer to have departmental teams.

The next two questions on teaming deal with the issue of whether the school staff members like to be part of a teaching team or prefer to work individually. In both pre- and post-tests, more than 60% of the staff responded that they "liked to be part of a teaching team." The pattern of response was the same in the repeaters as in the total group. The rate of agreement in the low, moderate, and high groups across the ESS intensity subscales parallels that of the total respondents. Agreement was lower on the post-test than the pre-test. At the same time, the percentage of undecided respondents grew from 12% to 23%. The response pattern for the statement "you prefer to work individually rather than with a team" showed simmilar results, with a majority of the staff preferring to work on a team rather than individually.

Science, home economics, shop and social studies teachers account for the shift in the undecideds. In the post-test, three of six social studies teachers were undecided; four of seven shop and home economics teachers were undecided; and two of five science teachers were undecided. This indecision may be the result of different working definitions of a teaching team. For instance, home economics and shop are part of departmental teams, but they do not meet with a school-within-a-school team. They may not consider themselves to be members of a teaching team. As mentioned in the preceding question, science teachers have been on a successfully working departmental team and are undecided on the value of an interdepartmental school-within-a-school team. During an in-depth interview an academic teacher was asked, "Would you like to see changes in the team, what should it be or what should it do that is not being done now?". This teacher responded:

> I think it would be better if the team could include some specialists, somehow, some way, so that you would not just see the other teachers that you have for an academic subject, but you would also be able to talk to a teacher who has that person in say, home economics or music or shop and get some insight and feeling of how that student is doing in that subject, too.

This teacher's idea of teaming had been consistent: "I like to work with other teachers, have always valued working with other teachers, and I dislike being isolated."

A specialist teacher, responding to interview questions about the teaming of teachers in school-within-a-school, said:

> Well, I am a specialist, a specialist is not part of any school . . . so I don't have much contact with any of the schools . . . .. I think specialists should be on a team. I think we should be assigned to some school.

An academic teacher was asked "Do you think teaming is valuable?" and commented:

> Definitely. Because I think we have a better hold on kids and we know kids better. It isn't a matter of looking at a youngster in isolation and saying - . . . he isn't doing well in class, and just putting them through an assembly line and really not thinking about that. When you meet somebody else and say, the same person isn't doing very well in a couple of other classes. It may not be you, but it might be something going on with the youngster.

Then the same teacher was asked "Does teaming affect your working conditions here?"

> I would say so. I think insofar as you have a hold on youngsters and a better way of dealing with them. It certainly affects it.

The final question on teaming was "Do you think it affects the student's achievement and learning conditions?" This teacher responded:

> Yes, because I think on a discipline end of things, I think it keeps a better view of the discipline problems. on the learning situations, I think if the youngster is having problems I think we're more likely to identify youngsters with learning disabilities and learning problems in a teaming approach rather than just seeing them one period a day and then not thinking about them. When you get together with a couple of other teachers, and you are finding there are the same difficulties cropping up in other classes, you are more likely to look at it and say, I'd better make a referral about this.

Another academic teacher said:

> Well, the only thing that the team is now, really, is just, a group of four individuals who share the same students. And we know we share those students. So that dialogue about the students and their particular problems and concerns is more possible. But we're very, very far away from true teaming. Or even less than true teaming. We just really, we've completely departed from the concept. The only thing that I said is that it does allow dialogue about kids we have in common.

Research Question #2b: Do organizational changes at the Junior High affect staff's perceptions of job satisfaction?

Four questions on the School Survey referred to staff job satisfaction (#1, 20, 21, 22). On the pre-test only 24% of the school staff (30% of the repeaters) agreed that their "current schedule best utilizes your talent as a teacher." In the post-test 42% agreed (44% of the repeaters). On each test approximately 30% were undecided. In all, 58% of the staff on the post-test did not agree that their current schedule best utilized their talent as a teacher. The shift toward more agreement occurs in all subject areas except English, science, and special education where there was no change (see Table 6).

On the pre-test 64% of the staff agreed that they were "satisfied working with the present members of their team." On the post-test 83% were in agreement. Only one person disagreed with this statement. Agreement rate of the repeaters group was nearly the same (66% and 84%). On all three HSS intensity subscales, high, low, and moderate groups tended to respond to this question in the same pattern as the composite.

Although responses to the previous question indicate that staff is satisfied with the present members of their teams, they are not satisfied with the present ability grouping of students. In both the pre- and post-tests only two-fifths of the staff agreed that they were "satisfied with the present homogeneous and heterogeneous grouping of students." In the repeaters group 53% agreed on the pre-test, but only 40% agreed on the post-test. Despite changes to homogeneous grouping in math and English only two of six math teachers and two of five English teachers were satisfied with grouping on the post-test.

The ARCS initial Staff Opinion Survey (SOS) in December of 1981 indicates that both academic and non-academic teachers felt that math and English should be homogeneously grouped, and that specials, social studies, and science should be heterogeneously grouped (39 of 44 staff agreed in each case). Furthermore, 32 of 44 respondents were in disagreement to the statement that homogeneous grouping by ability for all classes was best.

In the interview in 1982 one academic teacher responded to this issue as follows:

> I disagree with ability grouping only as far as going too far with it. My only fear with ability grouping is that we do not get to a stage where every single class will be grouped from, you know, the top, top, top to the top to the middle top and then middle, middle and then lower middle and so on. I don't feel that every single class should be grouped. I feel that, sure, some students who are deserving and excel and have that ability to move on academically on their own should have that opportunity. But I think that is a small number of students compared to the majority, and I think that the majority of students prefer just to work as the group and learn from each other not just from people who may be the exact same ability.

TABLE 6
School Survey Responses on Job Satisfaction

1. Your current schedule best utilizes your talent as a teacher.

Total	Agree	Disagree	Undecided
pre (n=46)	24%	46%	30%
post (n=45)	42%	29%	29%
Repeaters			
pre (n=37)	30%	41%	30%
post (n=36)	44%	31%	25%

20. You are satisfied working with the present members of your team.

Total	Agree	Disagree	Undecided
pre (n=39)	64%	21%	15%
post (n=40)	84%	2%	14%
Repeaters			
pre (n=38)	66%	19%	15%
post (n=38)	84%	3%	13%

21. You are satisfied with the present homogeneous and heterogeneous grouping of students.

Total	Agree	Disagree	Undecided
pre (n=45)	42%	29%	29%
post (n=45)	38%	31%	31%
Repeaters			
pre (n=36)	53%	17%	31%
post (n=35)	40%	31%	29%

22.

Total	Agree	Disagree	Undecided
post only (n=45)	33%	44%	23%
males	32%	56%	30%
females	28%	30%	16%
years of experience			
4-12	21%	71%	8%
12+	42%	35%	23%

When considering the relation of grouping to students' learning and achievement, this teacher also said:

> I think in the junior high if you start grouping and just group all lower kids together you get a detrimental affect on learning, and it becomes strictly discipline situation. And that I do not want to see happen. I think that the better kids from the better homes can learn a lot from kids who come from more disadvantaged backgrounds by being with them in class, and that the disadvantaged background children can learn from the ones with a better background. I think that is a valuable experience, and I think junior high students are better for it. So I don't feel that they should be separated according to - Oftentimes, their ability is also so much money their parents make or how good their parents situation is outside of school.

Another teacher spoke to the effect of homogeneous and heterogeneous grouping of students on teachers' working conditions.

> Its a hard question to answer. We have different subjects and different concerns in all those subjects. And then right within my own subject, there is a variety of concerns about what should be homogeneously grouped or heterogeneously grouped. Unfortunately, there isn't any other way to teach English but homogeneously grouped classes. And, I guess the kind of homogeneous groups that seem to work in English, grouping together kids of higher ability who are pretty much well above average. And not grouping the rest of the people. I think what was always bad about homogeneously grouped classes was the bottom groups of almost no ability being stuck together. It was an atmosphere of despair and confusion, I think, in those really low ability classes.

A specials teacher said:

> I would say that all of our classes are heterogeneously grouped, meaning kids of different abilities are in the class. I personally think that it makes it very difficult at times - especially - citing my class again where you have some extremely capable kids and there are other kids who are behavior problems because they are not as capable. There are times that we get a large group of kids incorporated into the class that are special needs students. It would be a lot easier if they were spread out one or two here and there rather than getting six of them in a class of 22. In the seventh grade this year it happens that we pick them (the special needs students) up sixth period which is our last class and that is making some classes a bit difficult. These students require a little more attention and so forth. I am not totally in favor of isolating them by having them all in one class, but at the same time it would be nice to have some homogeneously grouped kids. They are doing this for algebra. They are doing this for advanced English, and you know, if there is an interest or

a need on the student's part to do it in a specials area, I certainly would like to see it in art.

Question #22 appears on the SS post-test only. It was an attempt to determine the impact of the increased salary levels which took effect for the school year 1982-83. Composite responses to "salary increase has made a difference in my level of job satisfaction" show more disagreement than agreement. 56% of the men vs. 30% of the women disagree. Although the rates of agreement were similar, more men than women were undecided.

When comparing responses to the salary questions in terms of years of experience, 42% of teachers with more than 12 years of experience agree while only 21% of less experienced teachers agree. 35% of teachers with 12 or more years of experience disagree, while 71% of the less experienced teachers disagree. It is pertinent to note that the salary increases were more substantial for the more experienced people.

In a Comparison of Ranks of Attributes that contribute to vocational satisfaction, Douglas Heath (1981) reports that on 28 attributes salary or income ranked 28th in importance and 28th in actual satisfaction for teachers which was similar to other professions where salary/income was ranked 28th in importance and 27.5 in actual satisfaction.

Some responses from staff members on the salary question are interesting:

> Believe it or not, the raise, the money raise was not so much a factor with me as it was that the fact that my wife was rehired in teaching. It is very depressing when you have your wife at home who has been laid off twice as a teacher and is very upset about that and have come in to work and try to teach. So as far as the raise that is a very good thing, I think as teachers we deserve to be paid much better than we are, but for me to have my wife have professional satisfaction and be back to teaching is more valuable.

Another teacher said:

> You know, its hardly perceptible in today's economy.

Research Question 2c: Do organizational changes at the Junior High affect staff's perceptions of communication with colleagues?

Three questions on the School Survey referred to the time staff members have for communicating with their colleagues (#3, 4, 5). On both the pre- and post-tests, only one-third of the staff agreed with the statement, "You have time to talk to other staff members." Even fewer staff agreed that they had "time to share ideas and materials with other staff members." More staff agreed that they had "time to discuss student problems with a colleague." Responses from repeaters on all three questions are within 2 to 5 percentage points of the totals (see Table 7).

TABLE 7

School Survey Responses on Communication with Colleagues

3. You have time to discuss student problems with a colleague.

Total		Agree	Disagree	Undecided
pre	(n=47)	43%	34%	23%
post	(n=47)	55%	23%	21%
Repeaters				
pre	(n=38)	39%	37%	24%
post	(n=37)	57%	22%	22%

4. You have time to talk to other staff members.

Total		Agree	Disagree	Undecided
pre	(n=47)	38%	40%	21%
post	(n=47)	38%	32%	31%
Repeaters				
pre	(n=38)	37%	42%	21%
post	(n=37)	38%	27%	35%

5. You have time to share ideas and materials with other staff members.

Total		Agree	Disagree	Undecided
pre	(n=47)	30%	21%	49%
post	(n=46)	33%	37%	30%
Repeaters				
pre	(n=38)	32%	50%	18%
post	(n=37)	38%	35%	27%

On the question about time to discuss student problems with colleagues, the shift toward greater agreement in the post-test seems to have occurred across subject areas, and may be the result of more regular team meetings, or more teachers (e.g., special education teachers) participating in team meetings. Because team meetings tend to be devoted to discussion of student problems, staff members may feel they have more time available for this kind of communication with colleagues than for sharing other ideas, materials, and concerns.

When asked, "Do you feel that you have sufficient time to communicate with your fellow teachers?" one teacher said:

> No, I don't. That to me is the biggest problem in the school is the lack of communication between teachers. There is just no time to see other teachers other than the ones that you work with in your particular school. There is just no time to really sit down and talk with teachers in general during the school day.

Another teacher responded:

> Absolutely not. There is just not enough time in the day to be able to either communicate with colleagues about problems or concerns within the school or the building or about students or about ideas, projects or whatever.

On all three questions concerning communication with colleagues, shop and home economics teachers tended to agree, and academic teachers tended to disagree that they had time to talk with other staff members. For example, on question #3, six of seven shop and home economics teachers agree they have time to discuss student problems with a colleague, while 10 of 22 academic teachers agreed. On question #4, five of seven shop and home economics teachers who responded agreed they had time to share ideas and materials, while only five of the 21 academic teachers who responded agreed. Shop and home economics teachers share lunch and planning periods and have rooms located near one another. Because of this they may have more opportunity to communciate with their colleagues about student problems as well as other ideas and materials.

A specials teacher, however, noted:

> Yes, I do. I have plenty of time with them, talk to them . . .. Of course, the colleagues I communicate with are mostly shop teachers, and I spent 95% of my time right in this room and they are pretty great - cooperate about what kind of programs we run, things like that.

Research Question #2d: Do organizational changes at the Junior High affect staff's perceptions of communication with administration?

Four questions dealt with issues of communication with administration (#16, 17, 18, and 19). Communication with administration was also addressed during the individual interviews with a subset of staff. Three different staff commented as follows:

> For the most part, I think we have time during our planning period and they (administration) were pretty good when you want to meet with them.

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> I guess I don't personally make time. If it doesn't conveniently fit into my schedule, I make an adjustment somehow, whether it means getting somebody to cover a class for a few minutes or stopping into the office and seeing if the principal has a free moment second period tomorrow or, is 7th period better or something like that? Since we have a new principal here, I have felt more at ease communicating with administration. I think he has lent that to the staff. With his nature, you know, making time available first thing in the morning if you're passing through and have a quick concern or comment or whatever, you can take that few minutes and know he will be there.

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> I feel that for the most part I have time to do that only because I may feel a little more comfortable working with the office now than I have in the past and so if I do have something, you know, I feel confident enough to go down and say what I think. Whether or not anything is done about it is still an issue, but at least I feel I can go down and say what I think.

But, when asked specifically to respond to the following school survey statements, staff opinion was more varied and more negative regarding their communication with administration in terms of involvement in decision making and clarity of goals on teaming and grouping (see Table 8).

Just over one quarter of the staff on both the pre- and post-test felt they "have been involved in scheduling decisions on teaming." Responses from repeaters show the same results.

A second question dealing with communication with administration was "you have been involved in scheduling decisions on heterogeneous and homogeneous grouping of classes." On this question only 23% of all staff agreed on the pre-test, and only 33% agreed on the post-test. In the group of repeaters, roughly the same percentage of agreement occurred.

On the question, "you are clear about the goals on teaming," the percentage of staff who agree goes from 24% on the pre-test to 30% on the post-test. The percentage of staff who disagree changes from 59% on the pre-test to 33% on the post-test. Undecideds double from the pre-test to post-test. Because of a new principal who took office in mid-year, staff may have been unsure and, therefore, the increase of undecideds may show suspended judgment. Even with some scheduling changes and the principal being in his first full year in Fall, 1982, less than one-third of the staff in Fall,

TABLE 8

School Survey Responses on Communication with Administration

16. You have been involved in scheduling decisions on teaming.

Total		Agree	Disagree	Undecided
pre	(n=43)	27%	52%	21%
post	(n=44)	27%	64%	9%
Repeaters				
pre	(n=35)	31%	57%	12%
post	(n=34)	24%	65%	11%

17. You have been involved in scheduling decisions on heterogeneous and homogeneous grouping of classes.

Total		Agree	Disagree	Undecided
pre	(n=43)	28%	63%	12%
post	(n=45)	33%	60%	7%
Repeaters				
pre	(n=35)	31%	63%	6%
post	(n=35)	34%	60%	6%

18. You are clear about the goals of teaming at PJHS.

Total		Agree	Disagree	Undecided
pre	(n=46)	24%	59%	17%
post	(n=46)	30%	33%	37%
Repeaters				
pre	(n=37)	27%	51%	22%
post	(n=36)	33%	31%	36%

19. You are clear about the goals of heterogeneous and homogeneous grouping of students at PJHS.

Total		Agree	Disagree	Undecided
pre	(n=45)	29%	44%	27%
post	(n=47)	21%	45%	34%
Repeaters				
pre	(n=36)	36%	39%	25%
post	(n=37)	24%	35%	41%

1982, is clear on goals of teaming while more than two-thirds of the staff is either unclear or undecided. In the group of 37 staff who were repeaters, taking both pre- and post-tests, the percentages were very similar for agree, disagree, and undecided.

In the final question dealing with the issue of communciation with administration, "you are clear about the goals of heterogeneous grouping of students," the staff (and repeaters) are even less clear about the goals of grouping in Fall, 1982 than they were in Spring, 1982. In Fall, 1982, only 21% of the school staff feels they are clear on goals of grouping (10 out of 47 teachers). If responses from the shop/home economics teachers are not included, then only 12% of the school staff agrees that they are clear on grouping goals in the school. The changes from Spring to Fall show drops in percentages of agreement, similar levels of disagreement and increases in percentage of undecideds.

In the group of repeaters, teachers who have been at the school for years, the shifts are slightly more pronounced: agreement on clarity of grouping goals drops from 36% to 24%, disagreement drops slightly from 39% to 35%, while undecideds increase from 25% to 41%.

Research Question #2e: Do organizational changes at the Junior High affect staff's perception of teaching assignment?

Staff members were asked four questions relating to their teaching assignment (#11, 12, 14, 15). Given the statement, "everyone should teach reading," on the School Survey, 48% agreed on the pre-test and 61% agreed on the post-test. Responses of repeaters were similar. Since 61% of the staff agree, this question might bear further investigation when considering curriculum development. The ARCS team feels this question is open to interpretation. It would need probes to draw further conclusions. For example, were teachers using a reference point of teaching reading in content area or teaching reading as a separate subject? It would seem reading has wide support among school staff. The distribution of scores on high, moderate, and low subscales parallels distribution on the composite (see Table 9).

Staff were asked, "do you prefer teaching one grade level?" At pre-test 41% agreed and at post-test 55% agreed. In both years (1981-82 and 1982-83) academic teachers prefer teaching one grade level. Only three (3) out of twenty (20) academics on the post-test disagreed. Ten (10) out of sixteen (16) specials and special education teachers disagreed on the post-test. The change from pre- to post-test in agreement occurs in the areas of industrial arts, home economics, art, music, and physical education. The ARCS team could not account for this shift.

TABLE 9

School Survey Responses on Teaching Assignment

11. Every teacher should teach reading.

Total	Agree	Disagree	Undecided
pre (n=46)	48%	28%	24%
post (n=44)	61%	23%	16%
Repeaters			
pre (n=37)	51%	24%	24%
post (n=34)	59%	24%	18%

12. You prefer to teach one grade level.

Total	Agree	Disagree	Undecided
pre (n=42)	41%	48%	11%
post (n=44)	55%	34%	11%
Repeaters			
pre (n=36)	39%	50%	11%
post (n=35)	60%	29%	11%

14. Scheduling should permit a matchup between teachers' teaching styles and students' learning styles.

Total	Agree	Disagree	Undecided
pre (n=46)	61%	4%	35%
post (n=45)	49%	15%	36%
Repeaters			
pre (n=37)	57%	5%	38%
post (n=36)	53%	17%	31%

15. Scheduling should be done so that class loads are relatively equal.

Total	Agree	Disagree	Undecided
pre (n=46)	77%	14%	9%
post (n=46)	80%	11%	9%
Repeaters			
pre (n=37)	78%	16%	5%
post (n=36)	78%	14%	8%

Staff were asked if they thought "scheduling should permit a match up between teacher's teaching style and student's learning style." 61% agreed, 4% disagreed, and 35% were undecided on the pre-test School Survey.

When asked if they preferred scheduling "so that class loads are relatively equal?" staff agreed on both pre- and post-tests.

Research Question #2f: Do organizational changes at the Junior High affect staff's perception of time management and planning?

Four questions on the School Survey referred to time management and teacher planning (#6, 7, 8, 13).

Question number six asked whether "there is time to make teacher-made materials and lesson plans?" In the pre-test 36% of the teachers agreed; in the post-test 47% agreed with the statement. In the pre-test 36% disagreed while in the post-test 26% do not feel they have time to make materials and lesson plans. 27% are undecided both times (see Table 10).

Staff were asked whether "you have time to form lesson objectives and break them down into smaller steps." On the post-test only one-third of the staff agreed. Most teachers either disagreed or were undecided.

The next School Survey question asked whether "your schedule provides planning time to accommodate individual differences among students." On the pre-test 26% agreed, and 33% agreed on post-test. There was movement from 59% disagree to 45% disagree from pre-test to post-test. The shift was found to be primarily in shop and home economics. It may point to the fact that these subject areas having common planning time and smaller classes are more able to accommodate individual differences.

The last Survey item deals with the idea that "each teacher should have the same amount of planning time." The majority of professional staff agreed with this statement.

Research Question #3: Is goal clarity and involvement in policy decision making related to staff morale/job satisfaction?

In examining teacher responses on the School Survey in relation to teacher level (high, moderate, low) on the Human Services Survey, the ARCS team found significant differences in the areas of communication with colleagues, communication with administration, and teacher planning and time management.

Communication with colleagues. When looking at responses of teachers who scored in the high, moderate and low groups on the HSS, the ARCS team found that teachers low in depersonalization and emotional exhaustion felt that they did have time to talk to other staff on all three questions concerning communication with colleagues. Those who were high in emotional exhaustion and depersonalization felt that they did not have time to talk to colleagues. In addition, teachers who have low feelings of accomplishment tend to feel they do not have time to communicate with colleagues, while those who have high feelings of personal accomplishment do tend to feel have time to talk with colleagues (see Table 11)

TABLE 10

School Survey Responses on Time Management and Planning

6. There is time to make teacher-made materials and lesson plans.

Total		Agree	Disagree	Undecided
pre	(n=44)	36%	36%	27%
post	(n=45	47%	26%	27%
Repeaters				
pre	(n=35)	40%	37%	23%
post	(n=36)	53%	28%	19%

7. You have time to form objectives and break them down into small steps.

Total		Agree	Disagree	Undecided
pre	(n=43)	35%	37%	28%
post	(n=44)	32%	36%	32%
Repeaters				
pre	(n=34)	38%	41%	20%
post	(n=35)	37%	34%	29%

8. Your schedule provides planning time to accommodate individual differences among students.

Total		Agree	Disagree	Undecided
pre	(n=46)	26%	59%	14%
post	(n=46)	33%	45%	22%
Repeaters				
pre	(n=37)	27%	59%	14%
post	(n=37)	38%	43%	19%

13. Every teacher should have the same amount of planning time.

Total		Agree	Disagree	Undecided
pre	(n=46)	74%	15%	11%
post	(n=47)	62%	17%	21%
Repeaters				
pre	(n=37)	68%	19%	14%
post	(n=37)	62%	22%	16%

TABLE 11

School Survey Responses on Communication with Colleagues which Varied Significantly According to Hi/Moderate/Low Levels of Emotional Exhaustion or Personal Accomplishment or Depersonalization*

COMMUNICATION WITH COLLEAGUES

4. You have time to talk to other staff members.

		Response to Survey Item #4		
		Agree	Disagree	Undecided
Feelings of Emotional Exhaustion				
Hi intensity	(n=16)	13%	63%	25%
Moderate intensity	(n=13)	30%	23%	46%
Low intensity	(n=16)	69%	6%	25%

		Response to Survey Item #4		
		Agree	Disagree	Undecided
Feelings of Personal Accomplishment				
Hi intensity	(n=12)	67%	25%	8%
Moderate intensity	(n=17)	24%	35%	41%
Low intensity	(n=15)	27%	27%	47%

		Response to Survey Item #4		
		Agree	Disagree	Undecided
Feelings of Depersonalization				
Hi intensity	(n=15)	33%	47%	20%
Moderate intensity	(n=16)	31%	31%	38%
Low intensity	(n=13)	54%	15%	31%

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*Three subscales on The Human Services Survey (Maslach Burnout Inventory, Maslach & Jackson, 1980)

TABLE 11 (continued)

School Survey Responses on Communication with Colleagues which Varied Significantly According to Hi/Moderate/Low Levels of Emotional Exhaustion or Personal Accomplishment or Depersonalization

COMMUNICATION WITH COLLEAGUES

3. You have time to discuss student problems with a colleague.

		Response to Survey Item #3		
		Agree	Disagree	Undecided
Feelings of Emotional Exhaustion				
Hi intensity	(n=16)	31%	44%	25%
Moderate intensity	(n=14)	43%	21%	29%
Low intensity	(n=16)	88%	6%	6%
Feelings of Personal Accomplishment				
Hi intensity	(n=12)	91%	8%	0%
Moderate intensity	(n=17)	41%	35%	23%
Low intensity	(n=15)	40%	20%	40%
Feelings of Depersonalization				
Hi intensity	(n=15)	40%	47%	13%
Moderate intensity	(n=16)	50%	25%	25%
Low intensity	(n=13)	86%	0%	14%

5. You have time to share ideas and material with other staff members.

		Response to Survey Item #5		
		Agree	Disagree	Undecided
Feelings of Emotional Exhaustion				
Hi intensity	(n=16)	6%	69%	25%
Moderate intensity	(n=11)	27%	36%	55%
Low intensity	(n=15)	67%	13%	20%
Feelings of Personal Accomplishment				
Hi intensity	(n=12)	67%	25%	8%
Moderate intensity	(n=17)	24%	35%	41%
Low intensity	(n=15)	20%	47%	33%
Feelings of Depersonalization				
Hi intensity	(n=15)	27%	47%	27%
Moderate intensity	(n=15)	20%	47%	33%
Low intensity	(n=13)	54%	15%	31%

Communication with administration. It is interesting that on the HSS Personal Accomplishment subscale, the percentages are quite different from the composite on the question of staff involvement in scheduling decisions on grouping. Of staff having high feelings of personal accomplishment, 64% agree with the statement, while 79% of staff with low feelings of personal accomplishment disagree with the question and say they have not been involved in scheduling decisions on grouping (see Table 12). In the composite School Survey responses (from Table 8) in Fall, 1982, 60% of the total staff (and the same percent of repeaters) feel they have not been involved in decisions on grouping.

On the teaming issue, 55% of staff in the high personal accomplishment category agree that they have been involved in scheduling decisions on teaming while only 8% of staff with low feelings of accomplishment agree. School Survey composite results on this question, as reported earlier in Table 8, show that only 27% of the total staff in Fall, 1982 agree that they have been involved in scheduling decisions on teaming.

On the HSS subscale for Emotional Exhaustion of those staff in the high emotional exhaustion category, only 6% agree they are clear on goals of teaming while 50% disagree. In the moderate and low categories of emotional exhaustion, almost the opposite is true; 46% of staff with low or moderate levels of exhaustion agree they are clear on goals of grouping and only 18% disagree.

Staff who score high on the Emotional Exhaustion subscale of the HSS have a 6% agreement rate with this question on clarity of goals of grouping, while 37% disagree, and 56% indicate they are undecided. In the group of staff with moderate levels of emotional exhaustion, 15% agree they are clear on grouping goals, 31% disagree, and 54% are undecided. In the group of staff with low levels of emotional exhaustion, 44% agree they are clear on goals of grouping, 25% disagree, and 31% are undecided. Thus, it is staff with low levels of emotional exhaustion who have the highest agreement rate with the question on clarity of grouping goals. From the composite School Survey results, however, only 21% of the total school staff agreeing that they are clear on goals of grouping (refer to Table 8). We can see that the issue of homogeneous and heterogeneous grouping is still an issue of concern for the school. This issue appeared in our original Staff Opinion Survey (SOS) in Winter, 1981, as a priority concern of the staff, and it appears to continue to be a major unclear issue in the school.

There does seem to be a difference on the HSS subscales in teacher response to the statement that they have time to make materials and lesson plans. Staff who feel low levels of personal accomplishment (40% disagree, 20% agree) and high levels of emotional exhaustion (50% disagree, 31% agree) feel that they do not have time to make materials and lesson plans. The opposite is true for staff with high feelings of personal accomplishment (66% agree, 12% disagree) and low levels of emotional exhaustion (60% agree, 13% disagree); they do feel they have time to make materials and lesson plans.

TABLE 12

School Survey Responses on Communication with Administration which Varied Significantly According to Hi/Moderate/Low Levels of Emotional Exhaustion or Personal Accomplishment or Depersonalization*

COMMUNICATION WITH ADMINISTRATION

16. You have been involved in scheduling decisions on teaming.

	Response to Survey Item #16		
	Agree	Disagree	Undecided
Feelings of Personal Accomplishment			
Hi intensity (n=11)	55%	45%	0%
Moderate intensity (n=17)	18%	76%	6%
Low intensity (n=13)	8%	69%	13%

17. You have been involved in scheduling decisions on heterogeneous/homogeneous grouping of classes?

	Response to Survey Item #17		
	Agree	Disagree	Undecided
Feelings of Personal Accomplishment			
Hi intensity (n=11)	64%	18%	18%
Moderate intensity (n=17)	29%	71%	0%
Low intensity (n=14)	14%	79%	7%

18. You are clear about the goals of teaming at PJHS.

	Response to Survey Item #18		
	Agree	Disagree	Undecided
Feelings of Emotional Exhaustion			
Hi intensity (n=16)	6%	50%	44%
Moderate intensity (n=13)	38%	15%	46%
Low intensity (n=15)	53%	20%	27%
Feelings of Personal Accomplishment			
Hi intensity (n=11)	45%	36%	11%
Moderate intensity (n=17)	35%	47%	18%
Low intensity (n=15)	13%	20%	67%

19. You are clear about the goals of heterogeneous/homogeneous grouping of students.

	Response to Survey Item #19		
	Agree	Disagree	Undecided
Feelings of Emotional Exhaustion			
Hi intensity (n=16)	6%	38%	56%
Moderate intensity (n=13)	15%	31%	54%
Low intensity (n=16)	44%	25%	31%

*Three subscales on The Human Services Survey (Maslach Burnout Inventory, Maslach & Jackson, 1980)

TABLE 13

School Survey Items of Teacher Planning and Time Management which Varied Significantly According to Hi/Moderate/Low Levels of Emotional Exhaustion or Personal Accomplishment or Depersonalization*

6. There is time to make teacher-made materials and lesson plans.

		Response to Survey Item #6		
		Agree	Disagree	Undecided
Feelings of Emotional Exhaustion				
Hi intensity	(n=16)	31%	50%	19%
Moderate intensity	(n=12)	50%	17%	33%
Low intensity	(n=15)	60%	13%	27%
Feelings of Personal Accomplishment				
Hi intensity	(n=12)	66%	12%	17%
Moderate intensity	(n=16)	63%	25%	13%
Low intensity	(n=15)	20%	40%	40%

8. Your schedule provides planning time to accommodate individual differences among students.

		Response to Survey Item #8		
		Agree	Disagree	Undecided
Feelings of Emotional Exhaustion				
Hi intensity	(n=16)	12%	69%	15%
Moderate intensity	(n=13)	31%	38%	31%
Low intensity	(n=15)	53%	33%	13%
Feelings of Personal Accomplishment				
Hi intensity	(n=12)	66%	33%	0%
Moderate intensity	(n=17)	29%	53%	18%
Low intensity	(n=15)	13%	53%	33%
Feelings of Depersonalization				
Hi intensity	(n=15)	27%	47%	27%
Moderate intensity	(n=15)	20%	53%	27%
Low intensity	(n=13)	54%	38%	8%

*Three subscales on The Human Services Survey (Maslach Burnout Inventory, Maslach & Jackson, 1980)

The overall findings on the School Survey questions dealing with time management and teacher planning was that staff members with low levels of emotional exhaustion and high feelings of personal accomplishment feel that they have sufficient time to reach time management and planning objectives. Teachers who have high levels of emotional exhaustion and low feelings of personal accomplishment do not feel they have sufficient planning time to make lesson plans, form objectives and break down into smaller steps, and accommodate individual student differences.

CONCLUSIONS

CONCLUSIONS REGARDING THE LACK OF DIFFERENCE IN HSS SCORES YEAR 1 TO YEAR 2

Research Question #1: Do organizational changes at the Junior High School affect staff morale/job satisfaction?

In relation to research question #1, the following conclusions were made.

There was no significant difference in level of job satisfaction/morale as measured by the HSS test in a correlated t-test from Year 1 to Year 2 with repeaters. Our expectations for changes from Year 1 to Year 2 in job satisfaction/ morale HSS scores was perhaps unwarranted. The organizational changes implemented were not designed to and, in fact, did not address the areas of concern identified by the staff.

For instance, in the original School Opinion Survey early in Year 1 the concerns identified were: 1) homogeneous vs. heterogeneous grouping of students, 2) house coordinators vs. department chairs, 3) class length in terms of time, and 4) schools-within-a-school (or teaming issues).

On the grouping issue the organizational changes involved math and English classes. In Year 1 of our study there was one algebra and one advanced English class in each 8th grade team. During Year 2 it was expanded to include also one advanced English and one pre-algebra class in each grade 7 team. Results from the original Staff Opinion Survey early in Year 1 indicated overall staff approval of this type of change, with 39 of 44 staff feeling that math and English should be homogeneously grouped.

In the School Survey pre-test (prior to the additional change to advanced 7th grade classes in Year 2), 53% of the repeaters agreed with the statement that they were satisfied with the present homogeneous/heterogeneous grouping system. After the changes, the School Survey post-test showed only 40% of the repeaters in agreement with the same statement. Even within the math and English departments, 4 of 6 math teachers and 3 of 5 English teachers were not satisfied with grouping as indicated by their post test responses.

Elsewhere in this paper a lack of staff involvement in policy decision making is discussed. If the English and math teachers had perceived greater involvement in the changes which so greatly affected their departments they might, in fact, have agreed with the statement in Year 2 that they "are satisfied with the present homogeneous and heterogeneous grouping of students."

In addition, we note that 39 of 44 staff were in agreement on the original Staff Opinion Survey that social studies, science, and specials should be heterogeneously grouped. Thus, the present practice of homogeneous grouping in math and English classes only is in accordance with staff preferences.

A second area of concern was the issue of house coordinators vs. department chairpersons. On the School Opinion Survey, early in Year 1, staff opinion was virtually split on this issue. During Year 2 of our study a change was made and department chairs replaced house coordinators. Despite the fact that this was a major change, it could not be expected to lead to change in morale/job satisfaction because of the neutralizing effect of the even split of staff opinion.

A third area of concern was the issue of length of time of classes. On the original Staff Opinion Survey in Year 1 all but two academic teachers were in agreement that 45-50 minute classes were best. About half the specials teachers said 60-70 minutes were best. Therefore, the change made to 50 minute classes in Year 2 could not be expected to affect the morale/job satisfaction of all staff.

A fourth identified area of concern was schools-within-a-school/teaming. No changes were made with respect to this issue in Year 2.

The other organizational changes in Year 2 (e.g., electives in art and music, all teachers have homeroom duty and study hall duty, etc. - see Appendix A) had little to do with the areas of staff concern identified on the original Staff Opinion Survey.

We feel the organizational changes were not accompanied by change in level of morale because staff opinion was split about house coordinators/department chairs and length of class time and no organizational changes occurred in teaming. When changes were made in the area of grouping, teachers felt the changes were made without their involvement.

CONCLUSIONS REGARDING THE SCHOOL SURVEY PRE-TEST AND POST-TEST

Research Question #2: Do organizational changes at the Junior High School affect teacher perceptions of teaming, job satisfaction, communication with colleges and administration, time management and teacher assignment?

Teaming

The teachers at Portsmouth Junior High School feel teaming is beneficial to teachers; they like to be part of a teaching team. They prefer to work with a team rather than individually. Only one respondent is not satisfied with working with present members of their team. This suggests that strong efforts should be made to maintain teaching teams at PJHS.

Communication with Administration

Interview responses suggest that we have a principal who is available for staff to talk to. Staff seem to value this availability. Survey results indicate, however, that staff perceive that they are not involved in making decisions on teaming and grouping, nor are they clear about the school goals of teaming and student grouping.

In response to the question, "Do you feel that this school has a philosophy or general goals?" one teacher said:

> I would say yes to that. I am not sure I can be specific as to what they are. I don't think of any one point in time since I was hired here, I ever got to see a piece of paper that said this was Portsmouth Junior High School's philosophy. . . . I think something should be written down, something spelled out in black and white. . . . When you start talking about philosophy, things can get pretty nebulous. And actually break down and itemize some certain goals or things for the school - its a good idea that it was done and available . . . ..

Our interview with the principal indicates he is clearer on the school's goals of teaming and grouping:

> The school will still be sectioned into three teams, with the seventh grade team and the eighth grade team, and my reason for that, for keeping that, and I think probably the reason it came about in the beginning when we first started this was to keep the kids in a smaller unit so that teachers get a chance to know them better, get a chance to meet together where they'd be free at the same time, and to talk about the kids and pretty much the direction they're headed in.

And when asked about grouping of students he said:

> I see it happening more within subjects - I do not see the school moving towards a pure homogeneous setup. We went through that, you know, seven or eight years ago for a number of years, that tracking system, and it didn't work . . .. I see the homogeneous grouping, then again not pure homogeneous grouping in the math and the English areas with the pre-algebra in the seventh, pre-algebra in the eighth, the advanced English in the seventh, the advanced English in the eighth and the French program, those are the areas, you know, we're working with somewhat now and I think we will work with in the future. I can't see us going to a homogeneous grouping in the science classes and the social studies classes.

Our findings show that the teachers at PJHS perceive themselves to be unclear on the goals of teacher teaming and grouping of students. A number of articles in the literature reviewed suggest that when teachers are unclear regarding the goals, this affects their job satisfaction and morale.

Communication with Colleagues

The majority of the staff at PJHS feel they do not have time to "talk to other staff members" or time to "share ideas and materials," and only 55% feel they have time to "discuss student problems with colleagues." More teachers feel they have time to discuss students' problems because weekly team meetings within the school provide that opportunity.

Time Management and Planning/Teacher Assignment

In the area of time management and planning teachers don't seem to feel that they have enough time to accommodate individual differences among students or to make teacher-made materials and lesson plans. This could lead to difficulties with the students who require individualized education plans.

Regarding the statement "every teacher should teach reading" the research team is undecided on why the staff agrees with such a high percentage (61%). It may mean either the staff should teach a skill-reading class or reading should be taught in the content area. This issue could be investigated further.

CONCLUSIONS REGARDING THE HI-MODERATE-LO HSS GROUPS

Research Question #3: Is goal clarity and teacher involvement in decision making related to staff morale/job satisfaction?

When the total staff was divided into thirds, high, moderate, and low groups based on their HSS scores, staff in high and low groups differed on their School Survey responses in three areas: 1) communication with colleagues, 2) communication with administration - i.e., clarity of goals and involvement in decision making, and 3) time management.

Staff with low levels of emotional exhaustion feel they have time to communicate with colleagues; those with high levels of emotional exhaustion do not. Staff with low levels of depersonalization also feel they have time to communicate with colleagues. Staff with high levels of depersonalization (callousness, cynicism, and insensitivity toward students) do not feel they have time to talk to colleagues.

Staff having high feelings of personal accomplishment feel they have been involved in scheduling decisions on homogeneous/heterogeneous grouping whereas staff with low feelings of personal accomplishment do not feel they have been involved.

Of those staff with high levels of emotional exhaustion, few agree that they are clear on the goals of teaming and grouping. Staff with low levels of emotional exhaustion, however, tend to agree more than disagree that they are clear on the goals of teaming and grouping.

In general, when staff members perceive there is time and an opportunity for communication with colleagues and administration they also tend to have higher levels of morale/job satisfaction.

The overall findings on the School Survey questions dealing with time management and teacher planning were that staff members with low levels of emotional exhaustion and high feelings of personal accomplishment feel that they have sufficient time to reach time management and planning objectives. Staff who have high levels of emotional exhaustion and low feelings of personal accomplishment do not feel they have sufficient planning time to "make lesson plans," "form objectives and break down into smaller steps" and "accommodate individual student differences." It appears that whenever possible scheduling should include staff input to reflect individuals' needs for effective planning time.

LIMITATIONS

Within the reality of the school setting a number of conditions may have affected our results. First, mortality in the sample from pre- to post-testing resulted in ten teachers, out of a total staff of 52, leaving the school after Year 1 of our study during which the pre-test data had been collected. The correlated t-test on the Human Services Survey (Maslach Burnout Inventory) was calculated using only the "repeaters," those staff who remained at the school both years. The total number of repeaters taking the pre-test and post-test was 38 out of 42 staff remaining in the school both years. Ten new staff joined the school during Year 2 of this study and their perceptions were also important to the research questions. Thus, when School Survey data was analyzed for Year 2 (the post-test data only), the total staff opinion was compared to the opinions of the repeaters.

Direct interview was an important part of this study to gather data from the entire school staff in the original Staff Opinion Survey which helped the team decide staff concerns. There may be biasing of the results by the direct interview method, specifically, the particular bias of the interviewer knowing the interviewee, however, the team decided this was a preferable design than use of an outsider to interview staff or simply handing out questionnaires.

The time of testing may have been a limitation, however, the team chose what they believed to be two equally stressful times in the school year - the pre-testing Year 1 was done in Spring, with one month remaining of school and the post-testing Year 2 was completed within one month prior to Christmas vacation.

All the surveys used in this study are "self-perceptionnaires" and therefore limited by all confounding variables linked to this category of data collection.

Questions arising in recent presentations of the findings and conclusions concern the further examination of Human Services Survey results for particular subgroups, i.e., math teachers, English teachers which we have not presented for every question but have included where the data seemed important. A second set of questions concern individuals who may have changed drastically in their scores or perceptions from Year 1 to Year 2, i.e., going from LO to HI HSS scores. Because confidentiality and anonymity was assured to all participants, the team has been reluctant to pursue this kind of analysis.

IMPLICATIONS AND SUGGESTIONS FOR FURTHER STUDY

The following section lists implications derived from the results and process of this collaborative action research study and suggestions for the future.

1. The effectiveness of the collaborative action research model within an actual project for change should be studied. Such a plan would probably involve the leader of the change project (e.g., principal, superintendent) as a member of the action research team.

   There are many points of view and various schemes for the assessment of the effectiveness of the use of the action research model in conjunction with a change project. For example, the results when the principal is the action research leader could be compared to the results when some other participant serves as leader.

2. A future study might consider the effects of school scheduling changes on the students by interviewing and surveying students or measuring learning achievement or attitude. Although beyond the scope of this study, effects of changes on students could be an important addition to further work in the area of school scheduling.

3. A future action research team could create and implement a program for reducing stress in the school and then evaluate this program by using the HSS in a pre-test/post-test analysis. For instance, involvement in decision making seems to relate to levels of morale/job satisfaction. Conclusions drawn from this study and others reviewed suggest this important organizational change should be studied by administrators and teachers.

4. Teachers who are now experienced in the collaborative action research process could use their skills in promoting the process with other school staffs at other sites.

5. Funding for skilled secretarial support outside the school is a necessary part of the collabdrative research process, not usually available at the school site.

6. The keeping of a complete agenda for all meetings over the length of the project is valuable in the collaborative research process and helpful in the end product.

7. Presentations of findings at prestigious national conferences promote feelings of accomplishment for the collaborative action research team members.

8. A clearinghouse or network for communication among ongoing action research projects could be very helpful. For instance, in this project we were able to collaborate and share research design with the Michigan ARCS group during Year 1. Later in Year 2 discussions with other action researchers at conferences enhanced the meaning of our own work and our knowledge of the history of collaborative action research.

9. Collaborative action research projects will be most successful when: school administrators provide support and voice any possible sanctions, research questions and agendas are not imposed prior to the formation of the team, and the research team maintains an awareness of issues of confidentiality and anonymity when collecting data from participants.

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APPENDIX A

Organizational Changes Effected Between 1981-82 and 1982-83 at PJHS

1. Homogeneous grouping expanded to include three 7th grade advanced English and three 7th grade prealgebra classes (one in each house) to match the three 8th grade advanced English and algebra classes.
2. No house coordinators, instead new department heads.
3. Department heads are teachers.
4. Set amount of time for all classes, 45 minutes.
5. Few staff changes.

6. New principal opens school this year.
7. Salary raises, pay period choice of 26 or 21 days.
8. Principal has been speaking to individual teachers about their concerns.
9. All faculty members have duties, e.g., homeroom, bus duty, cafeteria.
10. Everyone has study hall except department heads.

11. I.E.P.s completed by teachers for a whole year rather than each marking period.
12. Number of case workers for I.E.P. students reduced from seven to four (over 100 I.E.P.s).
13. Two behavioral management homerooms.
14. Changes in Resource team membership, e.g., new ideas.
15. P.E.E.P. and A.B.L.E.
16. KIDS 2 doubled in size.

17. Students have Specials - rotate on 4-day basis.
18. Students have elective choices within some Specials, e.g., art and music.

19. No in-school suspension.
20. Bells and tardy bell for changing classes.
21. Students not allowed to go to lockers between periods.
22. Computer scheduling of classes.

Appendix B

STAFF OPINION SURVEY

ACTION RESEARCH ON CHANGE IN SCHOOLS

TEACHER SURVEY - NEW HAMPSHIRE

3 February 1982

TO: All Staff Members

FROM: Action Research Team

RE: Teacher Survey

Attached you will find a copy of the results of a recent survey you completed. The charts represent a detailed breakdown of the responses. The four academic areas appear first, math; social studies; science; and English; and then a sub-total. Next are five additional areas: home economics; industrial arts; music plus art plus physical education grouped together; resource people; and administration plus guidance followed by a sub-total of these areas. The overall school total is shown in the last column.

In questions that asked for an extended response, the most frequently mentioned top three responses are published. Responses are additionally broken down by academic teachers and non-academic teachers (meaning all other staff members). There were many more comments that were too numerous to print. All of your comments will be considered by the Action Research Team. In the near future, it is hoped that the Action Research Team will have a meeting to allow teachers to meet with us to discuss your concerns.

The Action Research Team greatly appreciates your cooperation and always welcomes your input. Again, many thanks for your assistance.

plw

Attachment

Appendix B

NEW HAMPSHIRE
ACTION RESEARCH ON CHANGE IN SCHOOLS
TEACHER SURVEY
RESULTS

eamble: I am a member of a 5 person action research team. The action research team has been funded by the National Institute of Education for a two year period to research issues of change in schools. We decided to conduct research on an issue important to our school. Scheduling seems the leading concern and problem.

Using the following format, we plan to interview all staff members who wish to be interviewed to determine their views on scheduling and related issues. We also wish to solicit your suggestions on specific avenues of research.

Your responses will be confidential. Aggregate results will be publicized. The findings are to help us direct our research.

(Have you any questions before we begin?)

Most of the responses have the following format: a) strongly disagree, b) disagree, c) agree, and d) strongly agree.

Views on Present Scheduling

1. The present schedule is satisfactory

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	2	1	1	4	3	2	3	2	3	13	17
b. disagree	3	3	3	3	12	1	1	1	1	0	4	16
c. agree	1	2	1	2	6	0	1	1	3	0	5	11
d. strongly agree	1	0	0	0	1	0	0	0	0	1	1	2

2. What things do you like most about present schedule?

Academic teachers	Non-Academic teachers
a) Length of class period	a) Length of class
b) Five academic classes	b) Seven period day
c) Small classes	c) Nothing

3. What things do you like least about present schedule?

Academic teachers	Non-Academic teachers
a) Study halls	a) Poor arrangements for specials classes
b) Lack of flexibility	b) Study halls
c) Not enough extra time during day for house meeting	c) Periods too short and too many classes

11. Schools-Within-A-School

1. The schools-within-a-school organizational concept should be retained.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	2	0	2	0	0	0	0	0	0	2
b. disagree	1	0	1	1	3	0	0	2	3	0	5	8
c. agree	3	1	1	2	7	4	2	3	1	1	13	20
d. strongly agree	1	6	1	3	11	0	2	0	2	1	5	16

2. What things do you like most about "schools-within-a-school"?

Academic teachers	Non-Academic teachers
a) Teachers share common group of kids	a) Students have identity
b) Students have identity	b) Teaching teams meeting time together to discuss kids
c) Smaller classes	c) Less confusion - more organized

3. What things do you like least about "schools-within-a-school"?

Academic teachers	Non-Academic teachers
a) Isolates teachers from other teachers	a) Specialists not involved in teams
b) Its not like it used to be	b) Isolates teachers and kids
c) Not enough total school identity	c) Decreases flexibility

4. Teaching teams should have the opportunity to meet during school hours.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	0	1	2	0	0	0	0	0	0	2
b. disagree	0	0	0	0	0	0	0	1	0	0	1	1
c. agree	1	1	3	3	8	4	3	4	2	0	13	21
d. strongly agree	3	5	2	2	12	0	1	1	4	4	10	22

5. Teaching teams memberships should be determined by the teachers.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	1	0	2	0	0	1	1	0	2	4
b. disagree	0	1	1	0	2	1	1	1	1	0	4	6
c. agree	3	2	2	4	11	2	3	4	3	3	15	26
d. strongly agree	2	2	1	2	7	1	0	0	1	1	3	10

6. Teaching teams should be abandoned.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	5	2	3	13	0	1	0	2	2	5	18
b. disagree	2	2	0	1	5	4	2	4	2	2	14	19
c. agree	0	0	1	1	2	0	0	1	2	0	3	5
d. strongly agree	0	0	2	1	3	0	0	0	0	0	0	3

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7. The action research group should study the educational value of "schools-within-a-school" and/or team teaching.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	1	0	0	0	1	1
b. disagree	0	0	1	1	2	0	1	1	1	0	3	5
c. agree	5	7	3	2	17	3	2	2	4	2	13	30
d. strongly agree	0	0	1	2	3	0	0	1	1	2	4	7

III. Leadership

1. House coordinators should be retained.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	1	0	0	2	3	0	0	3	2	1	6	9
b. disagree	0	3	2	1	6	0	1	1	1	0	3	9
c. agree	2	2	1	3	8	4	2	2	3	1	12	20
d. strongly agree	0	2	2	0	4	0	1	0	0	2	3	7

2. If there is to be system of house coordinators, there should be .... (how many?).

Academic teachers	Non-Academic teachers
a) One for each house	a) One for each house
b) One for each grade	b) One for each grade
c) Zero	c) Zero

3. Beginning next year, teachers, rather than administrators, should serve as department chairpersons.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	0	0	1	0	0	0	0	0	0	1
b. disagree	0	0	0	1	1	1	1	0	1	0	3	4
c. agree	0	2	2	2	6	3	2	4	2	2	13	19
d. strongly agree	4	4	3	3	14	0	1	3	3	2	9	23

4. Were it not possible to have teachers serve as both house coordinator and department chairperson, which would you prefer?

a. teachers in the house coordinator role	23
b. teachers in the department chairperson role	18

5. The action research team should study the educational benefits of house coordinators and/or department chairpersons.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	1	0	0	0	1	1
b. disagree	0	0	1	0	1	0	1	1	0	0	2	3
c. agree	4	6	3	4	17	3	2	3	4	2	14	31
d. strongly agree	0	0	1	1	2	0	0	2	1	2	5	7

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IV. Ability Grouping

1. Homogeneous grouping by ability for all classes is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	2	2	1	8	2	2	0	0	2	5	16
b. disagree	2	3	1	2	8	1	2	3	2	2	10	18
c. agree	0	1	1	1	3	0	0	2	2	0	4	7
d. strongly agree	0	1	0	1	2	1	0	1	1	0	3	5

2. Heterogeneous grouping by ability for all classes is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	3	1	0	1	5	0	1	0	0	2	3	8
b. disagree	2	5	1	3	11	2	1	5	4	1	13	24
c. agree	0	0	3	1	4	1	1	0	1	0	3	9
d. strongly agree	0	1	0	0	1	1	1	0	0	1	3	4

3. Some subjects demand homogeneous ability grouping.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	1	1	0	0	0	2	2
b. disagree	0	0	0	0	0	1	1	1	0	0	3	3
c. agree	3	4	4	4	15	2	2	2	3	2	11	26
d. strongly agree	2	2	1	2	7	0	0	3	2	1	6	13

If agree, which ones?

Academic teachers	Non-Academic teachers
a) Math	a) Math
b) English	b) English
c) Foreign language	c) Advanced math and English

4. At least some classes should feature heterogeneous ability grouping.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	0	0	0	0	0	0	1	1	0	0	2	2
c. agree	2	5	4	3	14	3	2	3	4	1	13	27
d. strongly agree	2	2	1	1	6	1	1	1	1	2	6	12

If agree, which ones?

Academic teachers	Non-Academic teachers
a) Specials	a) Specials
b) Social studies	b) Social studies
c) Science	c) Science

5. The action research group should research homogeneous and heterogeneous grouping schemes.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	1	0	1	0	2	0	1	0	0	0	1	3
c. agree	3	4	4	4	15	3	3	3	5	3	17	32
d. strongly agree	1	3	0	1	5	0	0	2	1	1	4	9

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V. Time Frame

1. Present 50 minute classes are ideal.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	1	1	1	1	0	0	0	2	3
b. disagree	0	3	0	2	5	2	2	0	1	1	6	11
c. agree	3	4	5	3	15	0	1	5	3	3	12	27
d. strongly agree	2	0	0	0	2	1	0	1	2	0	4	6

2. The perfect length in time for my class is . . . . minutes.

Academic teachers	Non-Academic teachers
a) All but two teachers said 45-50 minutes	a) Answers varied from 25 to 75 minutes About half said 60-70 minutes

3. The action research group should study class length.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	0	2	2	1	5	0	2	4	1	1	8	13
c. agree	3	4	3	3	13	2	2	0	4	3	11	24
d. strongly agree	2	1	0	1	4	2	0	2	0	1	5	9

VI. Other Scheduling Variations

1. Holding all classes in same order, every day is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	2	4	1	0	7	0	0	2	0	0	2	9
b. disagree	0	1	2	2	5	2	1	2	1	1	7	12
c. agree	3	1	2	2	8	2	3	2	4	1	12	20
d. strongly agree	0	1	0	2	3	0	0	0	1	1	2	5

2. The rotation of the order of classes each day is best.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	1	1	1	3	0	0	0	1	1	2	5
b. disagree	3	1	1	3	8	1	2	1	4	1	9	17
c. agree	1	2	1	2	6	2	0	3	0	2	7	13
d. strongly agree	1	3	2	0	6	0	1	2	1	0	4	10

3. Each team of teachers should be able to adjust the schedule to suit their needs to the greatest extent possible.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	1	0	1	1
b. disagree	0	0	2	0	2	0	1	1	0	0	2	4
c. agree	3	5	3	3	14	2	2	5	4	4	17	31
d. strongly agree	2	2	0	3	7	2	1	0	1	0	4	11

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4. The action research team should study the impact on learning of the static vs. the rotating order of daily classes.

	M	SS	Sci	Eng	Sub	HE	IA	Mus Art PE	Res	Adm Gui	Sub	T
a. strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0
b. disagree	1	0	3	0	4	0	1	2	1	1	5	9
c. agree	3	5	2	3	13	3	2	3	4	3	15	28
d. strongly agree	1	2	0	1	4	0	1	1	0	0	2	6

VII. Prioritization of Research Topics

(Rank order)

_______ Homogeneous vs. heterogeneous grouping

_______ Schools-within-a-school

_______ Team teaching

_______ Value of house coordinator role

_______ Value of department chairperson role

_______ Effective length of classes (minutes per period)

_______ Static vs. rotating scheduling

Academic teachers (top three)	Non-Academic teachers (top three)
a) Homogeneous vs. heterogeneous	a) Effective length of classes
b) Schools-within-a-school	b) Schools-within-a-school
c) Static vs. rotating schedule	c) Homogeneous vs. heterogeneous

Other Comments

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Appendix C

PJHS History 1972-1982

24 March 1982

DRAFT

John Alden

These are the dates changes were made in our school system. I have tried to show the programs in chronological order. They are as accurate as a teacher's memory will permit.

1970-71

Double tracked ability grouping - Math track and English track

16 Grade 8 classes grouped A-P

10 Grade 7 classes at main building

6 Grade 7 classes at annex

St. Patrick's Parochial School in main building to take classes in shop, home economics, and physical education. A school built for 550 students at one point now houses over 1,000 students

Title I program begins

Office detentions from work program to locked-in (all students in a classroom) program

Superintendent orders science to develop and teach a program in sex education.

1971-72

Two new science labs

New science program developed during summer

Science on a seven week rotating program

Each student, 5 courses

5 teachers in main building

Teachers hand out own marks every 7 weeks

One 8th grade class broken and students placed in 5 other classes for science.

1972-73

Flexible multilevel parallel tracking program both grades

All students in four groups

- A - Advanced
- B - High Average
- C - Low Average
- D - Below Average

Classes within ability groups mixed

1973-74

During year principal leaves. Assistant principal becomes temporary principal; then retires. A new principal is selected. Annex principal becomes new assistant principal. New annex principal

New principal starts a faculty senate which meets weekly to discuss school problems. Members are selected by departments

Junction program begins?

1974-75

Staff development program to 5 school boards. It is approved

Principal move to high school, new principal again at junior high

May-7th period mini-courses assigned to all teachers

Junior High building program approved

Parochial students no longer come to Jr. High

1975-76

Districtwide staff development 6 year plan now in operation

School on split sessions at two buildings, 2 morning groups, 2 afternoon groups. Extra time to be used by teachers for meetings, school visitations, special planning

Special team project afternoons at annex in which 5 teachers try total team approach with 4 classes: 2 above average, 2 below average

Mainstreaming of all students begins

Weekend conference in Dover, brainstorming issues in teaching

1976-77

4 schools-within-a-school established at the Jr. High. Each school has a team of teachers, students, and specialists. Each school's schedule is developed by teachers within designated time blocks. Each school has an unpaid house coordinator. Split sessions continue until Christmas

One school has fewer students but all Title (special needs) students

Teacher Corps project submitted and approved

1977-78

4 house coordinators in charge of 4 houses (department heads dropped - principal and vice principal now department heads)

Houses balanced: each has same number of students. Time blocks established; each house given lunch time and specials and is free to create schedule in rest of time. Students traveled in groups

Teacher Corps project 2 years

Junction program ends

Supervisory union broken

School district separates from 4 towns. Area agreement still in effect. Towns still send students to high school

Newington has area agreement for 7th and 8th grade students to be educated at our schools

1978-79

KIDS II project starts for emotionally handicapped

KIDS II mainstreamed when possible (science and social studies)

Last year of Teacher Corps

I.E.P. students all in one house

1979-80

1980-81

P.E.E.P.S. program begins for preschool special education students

One house eliminated: teachers reassigned from 4 to 3 teams

I.E.P.s all houses

1981-82

Principal leaves. Temporary principal. New principal (former staff member) hired

Project A.R.C.S. begins

3 houses remain; 2 house coordinators serve all three houses

Schedules done by house coordinators (up to now vice principal in charge of scheduling)

In-school suspension program starts

7 period schedule instituted

Appendix D

Human Services Survey/School Survey

ACTION RESEARCH ON CHANGE IN SCHOOLS

Preamble May 1982

In January, on our previous questionnaire, both academic and non-academic teachers ranked ability grouping (i.e., homogeneous and heterogeneous classes) and school within a school (i.e., teaming) among their top three priority issues for our research team to investigate. We would like to find out more about your perceptions of these issues by having you answer the questions below.

The responses are strictly confidential and only group results will be reported at a later date.

We appreciate your assistance.

Demographic Data

Your sex:

____ (1) male
____ (2) female

Marital status:

____ (1) single
____ (2) married
____ (3) divorced
____ (4) widowed
____ (5) other (please specify ______________________________)

If married, for how long have you been married to your current spouse?

____ years

If you have children, how many of them are now living with you?

____ children live with me
____ I have no children

Please check the highest degree you have received:

____ BA/BS
____ BA+15
____ MA
____ MA+15
____ MA+30
____ CAGS/2 MA

What is the subject area in which you teach? ______________________
Grade level? ______________________

Number of years teaching at Portsmouth Junior High School? ______________
Total number of years teaching? ______________________

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Human Services Survey

How Often:	0	1	2	3	4	5	6	
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day	
How Strong:	0	1	2	3	4	5	6	7
	Never	Very mild, barely noticeable			Moderate			Major, very strong

How Often 0-6 How Strong 0-7 Statements:

1. ____ ____ I feel emotionally drained from my work.
2. ____ ____ I feel used up at the end of the workday.
3. ____ ____ I feel fatigued when I get up in the morning and have to face another day on the job.
4. ____ ____ I can easily understand how my students feel about things.
5. ____ ____ I feel I treat some students as if they were impersonal objects.
6. ____ ____ Working with people all day is really a strain for me.
7. ____ ____ I deal very effectively with the problems of my students.
8. ____ ____ I feel burned out from my work.
9. ____ ____ I feel I'm positively influencing other people's lives through my work.
10. ____ ____ I've become more callous toward people since I took this job.
11. ____ ____ I worry that this job is hardening me emotionally.
12. ____ ____ I feel very energetic.
13. ____ ____ I feel frustrated by my job.
14. ____ ____ I feel I'm working too hard on my job.
15. ____ ____ I don't really care what happens to some students.
16. ____ ____ Working with people directly puts too much stress on me.
17. ____ ____ I can easily create a relaxed atmosphere with my students.
18. ____ ____ I feel exhilarated after working closely with my students.
19. ____ ____ I have accomplished many worthwhile things in this job.
20. ____ ____ I feel like I'm at the end of my rope.
21. ____ ____ In my work, I deal with emotional problems very calmly.
22. ____ ____ I feel students blame me for some of their problems.

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Please indicate how you feel about the following statements:

A. Definitely agree; B. Agree; C. Maybe; D. Disagree; E. Definitely disagree

____ 1. Your current schedule best utilizes your talent as a teacher.

____ 2. Team teaching is beneficial for teachers.

____ 3. You have time to discuss student problems with a colleague.

____ 4. You have time to talk to other staff members.

____ 5. You have time to share ideas and materials with other staff members.

____ 6. There is time to make teacher-made materials and lesson plans.

____ 7. You have time to form lesson objectives and break them down into small steps.

____ 8. Your schedule provides planning time to accommodate individual differences among students.

____ 9. You like to be part of a teaching team.

____ 10. You prefer to work individually rather than with a team.

____ 11. Every teacher should teach reading.

____ 12. You prefer to teach at one grade level.

____ 13. Every teacher should have the same amount of planning time.

____ 14. Scheduling should permit a matchup between teachers' teaching styles and students' learning styles.

____ 15. Scheduling should be done so that class loads are relatively equal.

____ 16. You have been involved in scheduling decisions on teaming.

____ 17. You have been involved in scheduling decisions on heterogeneous and homogeneous grouping of classes.

____ 18. You are clear about the goals of teaming at Portsmouth Junior High School.

____ 19. You are clear about the goals of homogeneous and heterogeneous grouping of students at PJHS.

____ 20. You are satisfied working with the present members of your team.

____ 21. You are satisfied with the present homogeneous and heterogeneous grouping of students.

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Appendix E

Interview Questions for PJHS Teachers, 1982

Introduction to Teacher Interviews
Portsmouth Junior High School
November, 1982

We have decided to ask several teachers to help in validating our research data by discussing several points. Please respond in the knowledge that we are speaking in confidence. Thank you for your cooperation.

1. Do you feel that this school has a philosophy, or general goals? If so, what do you think it is? If not, do you think we should have one? Why or why not?
2. Do you feel like you have time/are free to communicate with colleagues? Administration? Does your freedom or lack of it affect how you feel about teaching here?
3. What is your schedule? Are you satisfied with the schedule now? What changes would you like to see? Do you think these changes will occur? Why or why not?
4. Were you aware of any changes made in the schedule this year? Did they affect you in any way? (e.g., see changes on other sheet)
5. Have any of these changes affected your students' behavior? Achievement?
6. Each school is made up of teams of teachers. What do you feel a team is at PJHS? What should it be? Has it changed from last year? Do you think it is valuable? Does teaming affect your working conditions at PJHS (e.g., job satisfaction, level of morale, attitudes toward students)? Does teaming affect students' achievement and learning conditions? If so, how?
7. Do you think homogeneous and heterogeneous grouping of students affects your working conditions (e.g., job satisfaction, level of morale, attitudes toward students)? Does it affect students' learning conditions and achievement? If so, how?
8. Did any changes this year affect how you feel about your job, or your level of morale (e.g., salary raise, change in schedule, having a home room, having a study)?
9. Are there any things outside of school that are affecting your morale this year? Would you be willing to describe them?

Michigan Team Report
ARCS Report XII

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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT XII

ACTION RESEARCH ON CHANGE IN SCHOOLS: A STUDY OF SCHEDULING IN A MIDDLE SCHOOL

Michigan ARCS Team

Sharon N. Oja
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Principal Investigators

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INTRODUCTION: COLLABORATIVE ACTION RESEARCH

The Norup Action Research Project has been a two year collaborative action research effort involving representatives of Oakland University and Norup Middle School. In collaborative action research university researchers and classroom teachers collaborate in the identification of problems, the formulation and collection of data, the interpretation of information, and the application of findings to solving educational problems. For us, collaborative action research answers the question of who creates professional knowledge by arguing that the expected beneficiaries of educational research - teachers - should be significantly involved in designing and implementing their own research. There are three assumptions underlying this approach: 1) parity in decision-making among researchers and teachers, 2) respect for the unique perspective of each participant: and 3) equal assumption of responsibility among participants in the collaborative research process.

We have found that the collaborative research process has been of immediate benefit to us and can directly benefit Norup Middle School and its students and parents. We believe Norup and the community can gain not only from the results of research, but from the process itself. This means, for example, that teachers, students, and members of the community — as a result of participating in the research process, are able to articulate problems themselves and to initiate processes to find solutions. The fundamental principle of collaborative action research is that the research process is based on a system of collegial discussion, investigation, and analysis which leads to change.

In our view, collaborative action research is a process of concurrently inquiring about problems in education and acting on them. Our view of collaborative action research assumes that educational practice is the first

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business of education, that there is a recognized need to improve educational practice, and that the improvement of educational practice requires the confrontation of real problems in the school by conceiving alternatives and testing them out.

Most important, we believe that collaborative action research is substantial professional inquiry and staff development in its scope and outcomes. A teacher with the collaborative action research orientation and skill is no longer static or dependent on others for professional progress. The teacher's own professional growth and competence is enhanced. Not only are teachers likely to feel professionally alive, they may also feel effective — in that they can do something about their profession. If our action research project has met these goals then we are really describing a generic process of inquiry and growth which can significantly improve educational practices.

STATEMENT OF THE RESEARCH PROBLEM

The Norup Action Research Project began in September 1981. We spent the greater part of our initial team meetings in September and October developing a feeling of collegiality among ourselves. Our discussions were honest and forthright, focusing on a number of concerns which, among others, included the major events (particularly those over which we as teachers have no control) that occur during the school day and our reactions to them, the quality of work life in our middle school and its effect on our professional and personal lives, the broad issue of student motivation and achievement, the history of the school, decision making in the school, the role of the principal, and district wide approaches to staff development and educational change.

Once we reached consensus on our major concern, we attempted to label it

— a task far more difficult than we had anticipated. Our first problem definition was time management, but that seemed too confining a topic because it didn't include some of our concerns like student achievement and the quality of work life. We finally agreed the topic of scheduling encompassed our concerns.

To define the problem of scheduling more specifically each of us wrote a short paper in which we shared our speculations, hunches, and impressions about the significance of scheduling and its impact on the lives and work of teachers and students. We see scheduling affecting all dimensions of the middle school. Time is one of the most precious resources in the educational system and decisions about its allocation affect the curriculum, student learning, student and teacher relationships, and opportunities for innovation. The schedule reflects priorities and values about the educational process in a school. It can provide significant flexibility or severely limit flexibility. It can promote collegiality or fragmentation. The schedule can serve the school and its students or it can make the school and students its servants. The schedule is the vehicle which facilitates or inhibits all of the characteristics of the effective middle school. The ramifications of scheduling are pervasive and touch upon almost every aspect of the school. In our judgment it is an area worthy of action research.

QUESTIONS TO BE STUDIED

From our analysis and discussion we narrowed down the topic of scheduling to two broad researchable questions:

1. How can the school day be scheduled for the optimum intellectual and affective development of the middle school child at Norup Middle School?

2. How can the school day be scheduled to improve the quality of work life and the professional productivity and growth of teachers?

In an attempt to answer the two major research questions, we considered these additional issues:

- What are the essentials of scheduling? What are the givens and necessary conditions or the critical mass of personnel and resources required for an effective schedule?
- How do district goals and curriculum affect scheduling in the middle school? How does the district time management model affect scheduling?
- How does the middle school philosophy affect the scheduling? How does the schedule affect the middle school philosophy?

RESEARCH STRATEGIES

To define the parameters of the study, refine the research questions, and collect the data to address our questions we decided to take the following approaches:

1. Survey teachers and administrators at Norup Middle School for their opinions in five areas related to scheduling: scheduling, team teaching, middle school philosophy, grouping, and time management and planning.
2. Survey a random sample of Norup Middle School students for their opinions in areas related to scheduling: learning needs and styles, scheduling of classes, allocation of time for learning school subjects, sequencing of learning, subject matter organization.
3. Review the district's Middle School Philosophy to determine if Norup's scheduling practice is consistent with middle school philosophy.
4. Review professional literature on middle school scheduling and philosophy.
5. Examine how district goals and curriculum affect middle school scheduling.

6. Secure consultants with middle school expertise to discuss current middle school philosophies and practices.

7. Follow-up the teacher survey with in depth interviews with teachers.

8. Interview a random sample of parents for their perceptions and opinions regarding the middle school and scheduling.

9. Identify roadblocks and resistances to change.

We reviewed an ERIC compilation of abstracts on the middle school, read and shared articles, collected samples of middle school schedules and philosophies, recorded our thoughts about scheduling and middle schools in daily logs, and conducted surveys.

We designed three surveys (copies are in the Appendix) one which we administered to the teachers in our building at a luncheon in February 1982, the second which we administered in April 1982 to a random sampling of students in our school, and the third which we administered to a sample of parents at a parent/teacher conference program in October 1982. We also conducted indivdual interviews with sixteen teachers in January, 1983. The results (see Tables 1 and 2) of the surveys helped us in shaping our research and in identifying more clearly the issues of change which need to be addressed at Norup Middle School.

TEACHER SURVEY RESULTS

Twenty-two Norup teachers and four administrators completed the teacher survey in Feburary 1982. The average number of years of teaching experience among Norup teachers was 15.3 years with a mode of 13 years. Five teachers came to Norup Middle School from the elementary grades, seven have taught exclusively at the middle school and twelve came from the high school.

The majority of teachers preferred to teach grades six, seven, and eight with fourteen teachers choosing grade six, fifteen grade seven, and fourteen grade nine among their responses. Nine teachers indicated an interest in teaching twelfth grade.

TEAM TEACHING

Eleven teachers agreed that team teaching would be beneficial for teachers, eleven thought it might be beneficial while three disagreed. Eight teachers indicated they would like to be a member of a teaching team; fourteen thought they might like to be a member of a teaching team; and three disagreed. Ten teachers preferred to work individually rather than in a team. Eleven thought they might prefer to work individually rather than in a team.

The high incidence of "maybe" responses on the three team teaching questions suggested that team teaching invited further study. At the time we administered the questionnaire, we could only speculate about the reasons for the uncertainty teachers expressed in their responses on team teaching. Team teaching involves meshing the personalities of individual teachers, attitudes based on previous experience in team teaching or in the lack of such experience, and ambiquity regarding other team members or the subject matter to be team taught.

MIDDLE SCHOOL PHILOSOPHY AND APPROACHES

Twenty-four teachers felt qualified to teach their subject matter. Fifteen teachers (plus four administrators) were teaching in their major fields of study at the time of the survey. Only five teachers were teaching out of their major field, or in one of their minors.

Ten teachers indicated class size should remain the same while eleven believed class size should change. Because of the variance in responses this was a question which we thought might be valuable to pursue in follow-up interviews. Responses could be based on differences in teaching styles or subjects taught. It would also be useful to know how and in what direction responding teachers would like class sizes to change.

Although most teachers preferred to teach middle school grade levels, five teachers preferred teaching at one grade level, ten thought they might prefer one grade level, while twelve said they would like to teach at different grade levels. Nineteen teachers agreed they have gained flexibility through their middle school teaching experience.

Norup teachers felt they knew the current middle school philosophy (15-2), and that they were teaching to it (14-1). Overwhelmingly teachers believe their classes met the needs and interest of middle school children (21-0).

Many teachers (12-4) did not want to teach an activity class although they acknowledged (15-1) they had special knowledge or talent that would enable them to do so. Teachers also believed (18-3) they should not be required to teach reading. These responses seem inconsistent with middle school philosophy since the integration of activity classes in the curriculum and reading in the content areas are principal elements of the middle school approach. This is an area where additional study appeared to be warranted to explore more specifically teachers' views.

SCHEDULING

In the matter of scheduling, most teachers at Norup felt their current schedules utilized their teaching talents. Twice as many staff members (12) indicated they were satisfied as those who disagreed.

An overwhelming number of teachers (18) expressed agreement with the suggestion that there should be a permanent substitute teacher in the building to provide flexibility in the schedule. Only two teachers disagreed.

Norup teachers did not feel that students should be involved in planning their own schedules. Nine disagreed with the statement as opposed to five agreements. However, the same (9) said that "maybe" they would agree.

Apparently staff members were satisfied with the procedures of keeping the same roster of students September - June. Fourteen disagreed with the suggestion of a new roster second semester. Half that number (7) thought it would be a good idea.

The idea of a rotating schedule that varied from day to day was an unpopular one. Eighteen disagreed with the suggestion, in comparison to only three agreements. A rotating schedule with variations from week to week was nearly as unpopular, sixteen to two.

In response to the idea of scheduling several sections of the same grade level and the same subject at the same time, staff members responded positively with fourteen in agreement. Nine teachers answered maybe.

All of Norup's teachers who took the survey, with the exception of two, agreed that scheduling should be done so that class loads are relatively equal. Twenty-three agreed with this position. Eighteen teachers indicated they should have no more than two to three preparations per day (averaging out to two to five preparations).

GROUPING

A majority of teachers felt students should be grouped by ability in all subjects. However, as the skill level of the subject increases the number of teachers who indicated students should be grouped homogeneously increased. For example, twenty-three teachers believed math and reading classes should be grouped by ability. Four teachers responded unsure for math and three for reading.

While the number of teachers agreeing that students should be grouped in English and social studies was smaller, the majority still agreed they would like to have students grouped homogeneously by ability. Eleven teachers preferred ability grouping in social studies and fifteen in English. On the other hand, there were some teachers who did not want students grouped by ability - four in social studies and five in English.

Ten teachers agreed teaching styles and learning styles should be matched while five totally disagreed with the notion and eight were not sure.

TIME MANAGEMENT

Ten of the thirty-nine questions addressed the issue of time management which, for the purpose of this survey, included teacher planning time.

The difference between the teachers who agreed they have time to plan for all their classes (13) and those who disagreed (9) was minimal.

On the other hand, almost twice as many teachers as not (11-6) felt that they did not have adequate time to prepare teacher-made materials and write detailed lesson plans. Eight teachers answered "maybe", which may have indicated that although they felt adequately prepared to conduct their

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classes, they did not have the time to prepare materials that make a good lesson better. Likewise, only four teachers versus fourteen indicated their schedules provided adequate planning time to accommodate individual differences among students.

Among the responses to the three questions which dealt with inter-staff communications there was a split among teachers about whether they have time to talk with one another with eleven disagreeing and ten agreeing. Thirteen teachers disagreed that they had time to share ideas and materials. However, more teachers than not (11-8) found time to discuss student problems with colleagues.

Teachers appeared not to prefer morning over afternoon as the time when they would most like to have their planning periods. They were in agreement for the most part (17-5), however, that each teacher should have the same amount of planning time.

TEACHER INTERVIEWS

An analysis of the data collected through the survey identified team teaching, middle school philosophy and approach, class size, the teaching of reading and activity period as issues which required more examination. While the quantitative information yielded by the survey was valuable in determining areas for further study qualitative data were needed to develop a richer understanding of teacher perceptions and concerns. To secure such data we interviewed a random sample of sixteen teachers a year after the teacher survey had been administered. (A copy of the interview questionnaire is in the appendix).

TEAM TEACHING

In the professional literature almost all proposals for middle school organization call for interdiciplinary team teaching. When we asked teachers how they would define team teaching we found nearly common agreement - two or more teachers who work together to instruct a common group of students, sharing ideas, materials, and perspectives and teaching, planning, and designing instruction collaboratively.

When we asked teachers why so many responses on the teacher survey suggested ambiquity and hesitancy about adopting team teaching at Norup teachers identified a number of concerns.

- "Team teaching makes you more vulnerable - you work with other adults - you need to feel very secure and have a lot of administrative support".
- "Team teaching cannot be imposed. Will teachers be given the freedom to decide if they want to participate in team teaching as an option?"
- "We get into a rut - so used to running our classes independently - its difficult to give up one's automony - it can be threatening. We need to learn how to team-teaming isn't automatic - we need to learn the process of teaming."
- "How are teachers going to be teamed? What criteria will be used for teaming teachers? Will team mate put in the same amount of time and energy I put into my teaching?"
- "Teachers want to know who they would team with - compatability of personalities, philosophies, approaches, and styles - how would teams be formed - who picks the members of the teams?"

There was a consensus among all teachers interviewed that team teaching could be beneficial to students and teachers provided it was done on a voluntary basis, there was sufficient administrative support, and it was thoughtfully planned to address the needs and concerns of students and teachers.

TEACHING READING IN THE MIDDLE SCHOOL

In the teacher survey teachers by an 18-3 margin indicated they should not be required to teach reading. When we followed-up on this particular item and asked teachers why they felt so strongly about the requirement for teaching reading in the middle school the unanimous response was that teachers have not been professionally prepared to teach reading in the middle shool. Representative responses indicated:

- "Reading is traditionally thought of as an elementary school subject - I have not been trained to teach reading."
- "Teachers at Norup are very hard working with 2-3 preparations and in some cases more. They may feel uncomfortable about teaching in an area in which they have little background"
- "Majority of teachers at Norup are not elementary trained and feel very uncomfortable about teaching reading. They have not been prepared to teach reading."
- "If reading is to be the responsibility of every teacher then we should have instruction in how to teach in the content areas."

TEACHING ACTIVITY CLASSES

The teacher survey revealed that many teachers (twelve) disagreed with the statement - An academic teacher should also work with a group of students daily in an activity period. Nine teachers responded "maybe." Our follow-up interviews yielded several reasons for these responses:

- "Activity class is less structured, more demanding, many teachers are already overwhelmed with the number of preparations they have."
- "Activity class adds anxiety to teaching - its another preparation."
- "Activity classes need to be viewed differently - now viewed as filler time - we need to rethink the purposes of activity classes."

- "There are no expectations, no structure, its a case of do your own thing - activities seem unrelated."

CLASS SIZE

Many of the teachers we interviewed felt the question on the survey dealing with class size was ambiguous since one could interpret the item (Your class sizes should remain the same) In a variety of ways depending on subject matter, ideal, vs a va realistic and "reasonable" class size, needs of students, and teaching styles. Illustrating the range of responses were these comments:

- "Adolescents in this age range who are in transition to adulthood require attention and care - their intellectual, physical, emotional, and social needs are complex - they change so rapidly - dealing with 28-32 kids in each class - 120-150 every day is very demanding."
- "Class size should be reduced so we can meet the special needs of these children - all of these kids - gifted, average, slow children experiencing a lot of difficulty - deserve smaller classes where their needs can be met."
- "Class size depends on what you're teaching and who you're teaching - Teaching adolescence calls for a great deal of energy and time."
- "Some teachers may be comfortable teaching a large group - others with smaller groups - it depends on your teaching style and the special skills you build over the years."
- "Class size depends - in team teaching you could do a variety of things with class size - teaching science or reading or math - they make a difference - what are you teaching, who are the students, how are you teaching - all of these affect class size - there's no idea."

• "Some people with small classes are very happy with the status quo - some teachers with big classes are unhappy - the answer to the question will vary with the people you talk to."

• "Kids this age have a lot of needs. More than twenty-five in class is too much."

MIDDLE SCHOOL PHILOSOPHY

The discussions on class size easily led into comments about middle school philosophy, an area we wanted to delve into because responses to several items on the teacher survey suggested some inconsistencies with popularly held ideas about middle schools i.e. team teaching, every teacher is a reading teacher, and activity classes. Although the interviews yielded data to explain the apparent inconsistencies with middle school philosophy we were eager to learn the teachers' individual philosophies of middle school education. Their responses were succinct and to the point:

- "Take the kids - see where they are in their development and then bring them as far as you can."
- "I think middle school is the place where we should individualize as much as possible and provide an environment which will promote successful social as well as intellectual growth, and give youngsters the ability to cope with life particularly with peer pressures."
- "We should expose pupils to a positive learning atmosphere so youngsters will be successful academically and emotionally."
- "The middle school should encourage independence - help children to get along with their peers - we should give the pupils the best knowledge and skills we have - that takes some thought about what we are all about."
- "Middle school should be a combination of individualization, sensitivity to students' social needs, firmness that's reasonable and understandable, and academic goals to shoot for."

Our findings offer a profile of the Norup teacher as one especially concerned about: the many needs of adolescents, the appropriate class size and environment for enhancing their academic and social development, the subtleties and complexities of team teaching, the number of different class preparations required along with the expectations for teaching reading and activities. The consistent theme running throughout the interviews was concern for the best ways and most effective environment to meet the needs of a wide variety of adolescents going through dramatic change.

TABLE I

Norup Teacher Survey

Please indicate how you feel about the following statements:

A. Definietely agree
B. Agree
C. Maybe
D. Disagree
E. Definitely disagree

	A	P	C	D	E
1. Your current schedule best utilizes your talent as a teacher.	4	8	5	5	2
2. There is time for you to plan for all your classes.	5	3	7	7	2
3. Team teaching is beneficial for teachers.	4	7	11	3	-
4. You know our current middle school philosophy.	7	9	7	2	
5. You teach to our middle school philosophy.	5	8	9	1	
6. Your class sizes should remain the same.	4	6	4	6	5
7. You have time to discuss student problems with a colleague.	3	8	6	7	1
8. You have time to talk to other staff members.	2	8	5	10	1
9. You have time to share ideas and materials with other staff members.	1	5	7	10	3
10. There is time to make teacher made materials and lesson plans.	2	4	8	9	2
11. You feel qualified about teaching your subject matter.	18	6	1	1	
12. Your classes meet middle school children's needs and interests.	6	15	4		
13. You have gained teaching flexibility through your middle school teaching experience.	10	8	5	1	
14. There should be a permanent substitute teacher in the building to provide flexibility in the teaching schedule.	13	5	2	2	
15. Students should be grouped by ability in math.	16	7	4		
16. Students should be grouped by ability in reading.	16	6	3		

TABLE I - Norup Teacher Survey con't

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	A	B	C	D	
17. Students should be grouped by ability in English.	8	7	4	3	2
18. Students should be grouped by ability in social studies.	6	5	8	2	2
19. Students should be involved in planning their own schedules.	4	1	9	6	4
20. You have time to form lesson objectives and break them down into small steps.	2	5	7	7	1
21. Your schedule provides planning time to accommodate individual differences among students.	2	2	6	11	1
22. You would like to be part of a teaching team.	4	4	14	3	-
23. You prefer to work individually rather than in a team.	3	7	11	4	
24. You like to have your planning period in the morning.	2	4	9	4	4
25. You like to have your planning period in the afternoon following lunch.	6	5	11	2	-
26. An academic teacher should also work with a group of students daily in an activity situation.	1	3	9	9	3
27. Every teacher should teach reading.	2	1	4	9	9
28. You prefer to teach at one grade level.	1	3	10	10	2
29. You would like to have a new roster of students each semester.	5	3	3	11	3
30. Every teacher should have the same amount of planning time.	9	8	3	4	1
31. You have special knowledge or talent that enables you to organize and teach an elective course.	8	7	8	1	1
32. You would like to have a rotating schedule that varied from day to day.	2	1	2	8	10
33. You would like to have a rotating schedule that varied from week to week.	2	-	4	8	9
34. Scheduling should permit a matchup between teachers' teaching styles and students' learning styles.	5	5	8	3	2
35. Several sections of the same grade level and the same subject should be scheduled at the same time.	7	7	9	-	-
36. Standardized testing should not be done by classroom teachers.	1	5	6	11	1

TABLE I - Norup Teacher Survey con't

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	A	B	C	D	
37. Scheduleing should be done so that class loads are relatively equal.	11	13	-	2	-

A teacher should have _____ number of preparations.

STUDENT SURVEY RESULTS

The student survey was administered to 90 randomly-selected sixth, seventh, and eighth grade students. In addition to thirty-nine objective questions, the students were asked to respond to three open-ended questions.

LEARNING CONDITIONS

Questions on the survey required responses dealing with conditions which directly affected students' learning.

Oral Participation

Students responded positively to the questions dealing with oral participation. Overwhelmingly, (66-24) they preferred to participate verbally/orally in class and by almost the same margin disagreed with the statement, "I don't like to participate in class orally." (22-68).

Team Learning

When students were asked to assess their abilities to learn independently or with others, they verified they learn best when they work with a partner (67-23) or in a small-group situation (64-26). They also indicated they would like to work on projects with students from other classes during the day (53-37) and to help teachers teach kids in the elementary school (62-28). Students felt that their own learning accelerated when they helped other children learn. Students responded positively (66-24) to the statement, "I learn best when I can get help from other kids in class." Perhaps the connotation that a student is not capable of learning by him or herself is, in part, responsible for the response to the latter question or perhaps the responses suggest the best way to learn is to teach.

Teacher Direction

Students recognize the importance of the teacher direction in the learning process. Seventy-two of them agreed that they "learn best when the teacher gives a lot of examples." (72-18) They also agreed with the statement, "I learn best when I can work with a lot of direction and supervision from the teacher," but the ratio was considerably low (52-38). They disagreed with the statement, "I learn best when I can work independently (by myself) with little explanation and supervision (39-51).

Challenge in Learning

The students reacted to the issue of challenge in three questions. Their responses indicated that they learn best when their classwork is challenging (54-36), even difficult (54-90) rather than easy (23-68). Contrary to popular belief among teachers, however, the students did not support scheduling difficult/academic subjects in the morning (34-56) or in the afternoon (36-54). Their answers revealed they learn best when their "hard and easy subjects are mixed during the day." (65-25).

Students' Conformity

Students' conformity may be reflected in their responses to two statements with which they disagreed significantly: "I learn best when I am one of the fastest students in the class: (18-72) and "I learn best when I am a leader in the class" (28-62). Middle school students seen to respond most favorably to peer oriented team and group activities vs a vs standing alone among peers.

Time to Learn-Time to Think

Students consistently stated that they do not require more time in their academic classes than they do in the non-academic/activity classes. They did, however, suggest school time might be scheduled somewhat differently. Seventy students expressed an interest in setting aside ten to fifteen minutes within the class period to begin the homework assignment or practice the day's lesson. And eighty-three students felt they learn best when "I can take my time in doing my classwork."

Sixty-two students indicated that they would like some of their classes to be shorter or longer than forty-five minutes. In response to the statement, "I would like more time in the day to learn (academic subject)," as opposed to I need more time in the day to learn (academic subject) the survey indicated that fifty-one students would like more time to learn science and fifty-seven students requested more time in the school day for silent reading of stories and novels.

Eighty-one students like an activity period and also would like a study period during the day, possibly to work on homework assignments, practice the day's lessons, or involve themselves in silent reading.

Rotating Schedule

One item on the survey which needs further examination deals with a rotating schedule. Fifty percent of the students "would like to have a rotating schedule so that my schedule of classes is different each day of the week; while the other half disagreed. We believe the question may have been confusing to students who are unaware of the mechanics of a rotating schedule.

WHAT GETS IN THE WAY OF LEARNING?

In addition to the thirty-nine objective questions, the students responded to three open-ended questions. The first question asked students:

"What are the things that make it hard for you to learn?"

The Teacher

A total of 72 students thought the teacher was responsible for difficulties in learning. There were many reasons:

Eighteen said, "The teacher has to explain more;" "The teachers do not provide adequate assistance;" or "The teachers don't give examples."

Thirteen said, "The teacher talks too much."

Eleven said, "The teacher has favorites;" "The teacher has pets."

Other responses included: "The teacher doesn't call on me;" "The teacher is mean." The teacher does not listen to my opinion;" "The teacher doesn't let us have discussions;" "The teacher picks on me;" "The teacher expects too much of me;" "When a teacher is unfair, I tend to lose interest."

Class Room Conditions

Thirty-seven students indicated certain classroom conditions made it hard for them to learn:

"too hot; too noisy; not enough light in the room; if it's a nice day outside; cold weather; uncomfortable desks; sunshining in my eyes; too much noise; hours are too long; the smell of some rooms; the windows are closed; uncomfortable area and temperature."

Other Students

Thirty-two of the students said other students were responsible for conditions which made learning difficult:

> "kids talk too much, throw paper balls, yell; noisy people; other people are talking; being in class with pretty girls; people chomp on gum; to have the class clown talk all through the test; people who fool around; people ask dumb questions; classclowns."

Personal Concerns

For several students a variety of personal problems made it difficult for them to learn.

> "Headache; when the class is too early for me; when I'm afraid to ask a question; when I'm not feeling well; not enough challenging work; too much on my mind, too many tests; worrying about ther classes and homework; things you can't keep off your mind.

STUDENTS' BEST LEARNING EXPERIENCES

The students were asked to identify and describe the best learning experience they ever had and then to describe the best learning experience they ever had at Norup Middle School. Responses revealed that the students' best learning experiences were related either to a certain teacher or to activities in different classes. It is difficult to separate the teacher out from the learning activities in different classes. Our categories of responses are presented to identify differences in students' perceptions.

Teachers

Twenty-eight students (8-6th), 10-7th & 10-8th) felt a particular teacher was responsible for their best learning experience:

> "My fourth grade teacher. She was a nice, understanding teacher."
>
> "The teacher made everything fun."
>
> "Our teacher made us feel like adults who could make their own decisions."
>
> "I had a great teacher who had a lot of discipline and who gave us homework which parents had to participate in."
>
> "She helps the class understand the work."

The way my teacher used pictures to show how multiplication works."

Science

Twenty-eight students (14-6th, 9-7th and 5-8th) thought their best learning experience was in science:

"I learn about electricity and the fuse box."

"I like science because it tells you about your body and things around it."

"In science I made a project that went to seven different schools and won ribbons."

"I have learned a lot in science. We do experiments, we work with things, the class is fun."

"Our science class took apart a pig's heart. We could see a lot of parts and know the way it felt. We got to see the valves and stick our fingers through the Aorta."

Social Studies

Twenty-six students thought (8-6th, 7-7th and 11-8th) their best learning experience was in social studies:

"I enjoyed learning about what our land used to be like."

"In social studies we're learning about ancient civilization. I like to know how we got started."

"We brought in food that people who live in certain areas eat."

"In social studies, we did a play. It was so much fun you didn't even know how much work you did."

Language Arts

Seventeen students (5-6th, 4-7th & 8-8th) thought their best learning experience was in language arts, which included reading-type activities.

"We got to do book reports. I love reading and enjoy telling others about the books I read."

We were given a book at our level and we answered questions. The best part was everyone worked at their own level."

In reading I'm learning about the history of words."

Mathematics

Fifteen students (6-6th, 2-7th & 7-8th) thought their best learning experience ever was in mathematics.

"My best experience was mastering the multiplication tables and having the teacher write my name on the board for doing so."

"Mrs. (teacher) taught us how to use a computer."

"We played baseball with multiplication."

STUDENTS' BEST LEARNING EXPERIENCES AT NORUP

Teachers

The responses to best learning experience at Norup followed the same patterns as responses to the generic question. Forty students (12-6th, 11-7th & 17-8th) thought their best learning experience at Norup was due to a teacher:

"I found out that the teacher cares."

"Mrs. 'teacher' is trying hard to explain to me."

"Mrs. 'teacher' taught me a lot of tricks to do with math problems, especially decimals."

"Mrs. 'teacher' makes learning fun."

"Mrs. 'teacher' is a hard teacher and she teaches you things you ought to know."

"Mr. 'teacher' makes you take notes so you have to listen. He lectures in a way that's easy to understand."

"The teacher makes jokes about the subject and isn't so serious. That helps me a lot."

Science

Thirty students (12-6th, 9-7th and 9-8th) thought their best Norup Middle School learning experience was in science.

"In science, I learned about electricity. The teacher told me about fuses and how they work."

"My best experience is learning science. I like it because it tells you about your body and things around it."

In science we cut open a pig's heart. It was fun. I hope we can do it again."

"This year in science we do the experiments ourselves. I love to experiment and work with friends in groups."

"Our science class is really fun, we do a lot of experiments. We work with things and I feel I have learned a lot."

Social Studies

Twenty-one students (7-6th, 5-7th & 9-8th) thought their best experience at Norup Middle School was in social studies.

"In social studies I've learned more about history than I've learned in any other classes."

"Our social studies report on the culture of Spain."

"Studying culture in social studies - group of 2-4 people. Make up a ritual."

"Social studies was interesting and enjoyable. The activities we did were great!"

Language Arts

Thirteen students (3-6th, 2-7th & 8-8th) thought their best Norup learning experience was in language arts.

"Having to read novels and tell my point of view."

"Reading. I am reading a lot better than I was."

"My reading class this year has been the best because I remember the etymology and vocabulary words and use them in my every day talk."

"I'm in high reading class and it is hard, but I am getting a lot out of it."

Mathematics

And seven students (4-6th, 2-7th & 1-8th) said their best Norup learning experience was in math.

> "In math this year, the computer came into the room and we learned how to use it."

> "My best learning experience at Norup is my math class because she goes slow so we can understand."

LEARNING STYLES

Small Group "Hands-on" Activities

The responses also showed that students' "best learning experience ever" reflected various learning styles. However, at all three grade levels the students indicated they learned best through small group, hands-on activities. The younger the students, the more they chose this learning style. (19-6th, 13-7th & 10-8th).

> "Our science class took apart a pig's heart. We could see the parts and feel it. We got to see the valves and stick our fingers through the Aorta."

> "In second grade our teacher worked with small groups of kids."

> "Fifth grade we did a series of Revolutionary War plays."

> "We did an experiment with new science books; it wasn't all just reading and questions."

> "In science each group had a little tank, we had guppies, snails, and a lot of other stuff. It was really fun."

> "Our science class is fun. We do a lot of experiments, we work with things and I feel I have learned a lot."

Discussion/Lecture

Nineteen students felt class discussions and lectures were effective. (9-8th, 5-7th and 5-6th)

"We would have discussions on everything we were working on and that made the class fun."

"Our teacher told us everything about English."

"In social studies we discuss the Greeks and Romans."

"In science class, the teacher explained all the work we did very well."

Independent Activity

Twelve students (4-6th, 5-7th and 3-8th) thought their best learning experience was in a self-directed activity:

"The teacher gave us novels and we worked by ourselves for about an hour."

"Reading and math, we worked on our own and got to learn to read (and spell) and write real well at our own pace."

"The best part was that everyone worked at their own pace. The whole class wasn't just given one book and then went at the pace the teacher wanted."

Writing

Eleven students (3-6th, 6-7th, and 2-8th) thought their best learning experience occurred through written work.

"Every week our teacher would give us a topic and we had to write a two-page story about it."

"We had some cards and we had to write in booklet form."

"In fifth grade. We got to do book reports for every book we read."

Field trips were ranked low. (3-6th, 6-7th, & 2-8th)

"A fifth grade trip to Toronto 1 learned about mummies at the Royal Ontario Museum."

"My field trip to Greenfield Village in fourth grade. We spent the day in an old school house just like in the "good ol' days."

"We belong to Cranbrook Museum. I learn a lot when I can see what is really happening."

Memorization

Five students (1-6th and 4-8th) said their best learning experience involved memorization:

"Mine was mastering the multiplication tables."

"I would memorize pictures, and use them for my work if I go stuck."

LEARNING STYLES AT NORUP

Small Group "Hands-on" Activities

The best learning experience at Norum showed similar diversity of learning styles. Thirty-nine students (16-6th, 15-7th, and 8-8th) thought their best learning experience at Norup was a hands-on, small group activity:

"In social studies, the activities we did were great."

"In science we cut open a pig's heart. It was fun. We were in 7 or 8 groups."

"We did an experiment in groups where every day we switched stations. I learned a lot and had fun while I learned."

"In science this year we do experiments ourselves."

Discussion/Lecture

Twenty-seven students (8-6th, 5-7th and 14-8th) thought their best Norup experience involved lecture or discussion:

"Our teacher dictates as we take notes and then we look over the notes and we know everything."

"Reading classical literature and then going over the literature and discussing plot, theme, etc..."

"The teacher explains everything, and lets us have discussions. Having discussions really helps me to understand what we're learning instead of just trying to remember it and not understand it."

Writing

Thirteen students (3-6th, 2-7th and 8-8th) thought their best learning experience at Norup required written work:

> "In history, we have to write a paper on something from the book. I learn a lot from these projects."
>
> "We had to write reports on explorers. It was fun and I learned a lot."
>
> "I was responsible for reading a lot of books and writing a paper each marking period. It was hard work, but I never learned as much about writing papers."

Independent Activity

Twelve students (6-6th, 1-7th and 3-8th) indicated their best learning experience at Norup was a self-directed experience.

> "Doing things myself."
>
> "Doing a report which inspired me to create poems."
>
> "Doing a research paper."

Only one student said his best experience involved memorization and none mentioned field trips.

THE CLASSROOM TEACHER MAKES A DIFFERENCE

Our research findings indicate that the teacher does make a difference in promoting and/or interpreting learning. Despite the number of studies at the national level which have given primacy over the teacher to socio-economic factors, the home, and the peer group as the significant variables which influence learning, our student data clearly support the instructional power of the teacher as still the most important element influencing learning. When students were asked to describe the best learning experience they ever had the overwhelming response was to describe their best learning experiences in terms of a particular teacher or teaching approach. On the other hand when asked what got in the way of their learning the first response was the teacher.

We believe this is a significant finding which suggests that all of us in the school need to have opportunities to share with each other "trade secrets" on effective teaching. There is much we can learn and share together about our teaching styles. One of the promising ways of learning and growing together is through team teaching, another is through classroom visitations within the School and the district, and still another is through the formation of a teacher resource center where videotapes of effective instructional approaches could be housed and shared through teacher-led discussions and seminars on effective techniques in the classroom. Perhaps we also need to share our mistakes and seek from each other ways of addressing instructional needs which challenge and frustrate us. The implementation of these ideas require time for team building and the development of collegiality.

TABLE II

Middle School Student Survey

STUDENT SURVEY

	Agree	Disagree	
1.	72	18	I like an activity period during the day.
2.	72	18	I learn best when the teacher gives a lot of examples.
3.	29	61	I would like more time in the day to learn math.
4.	18	72	I learn best when I am one of the fastest students in the class.
5.	81	9	I would like a study period during the day.
6.	23	67	I need more time to learn science.
7.	39	51	I learn best when I can work independently (by myself) with little explanation and supervision.
8.	54	36	I learn best when the classwork is challenging.
9.	28	62	I learn best when I am a leader in the class.
10.	23	67	I would like more time in the day to learn English.
11.	66	24	I like to participate in class orally.
12.	34	56	I learn best when my hard subjects are scheduled in the morning.
13.	26	68	I need more time to learn social studies.
14.	23	68	I learn best when the classwork is easy.
15.	65	25	I learn best when my hard and easy subjects are mixed during the day.
16.	22	68	I don't like to participate in class orally.
17.	50	40	I learn best when the classwork is hard.
18.	51	39	I would like more time in the day to learn science.
19.	36	54	I learn best when my hard subjects are scheduled in the afternoon.

TABLE II

Middle School Student Survey
Continued

	Agree	Disagree	
20.	45	46	I would like to have a rotating schedule so that my schedule of classes is different each day of the week.
21.	54	36	I learn best when I do a lot of project work.
22.	29	61	I need more time to learn reading.
23.	64	26	I learn best when I can work in a small group situation in class.
24.	67	23	I learn best when I can work with a partner
25.	29	61	I would like more time in the day to learn social studies.
26.	83	8	I learn best when I can take my time in doing my classwork.
27.	70.5	19.5	I would like to have a ten to fifteen minute period at the end of each class to do homework.
28.	27	63	I would like to have more time in the day to learn reading.
29.	22	68	I like learning when I don't have to participate in class.
30.	52	38	I learn best when I can work with a lot of direction and supervision from the teacher.
31.	18	72	I need more time in the day to learn math.
32.	53	37	I would like to work on projects with students from other classes during the day.
33.	66	24	I learn best when I can help other kids learn.
34.	40	50	I learn best when I can get help from other kids in class.
35.	41	49	I need more time to learn English.
36.	62	28	I would like to help teachers teach kids in the elementary school.
37.	57	35	I would like more time in the day for silent reading of stories and novels.
38.	75	15	I would do better on tests if I had only one test to take a day.
39.	62	28	I would like some of my classes to be shorter or longer than 45 minutes.

PARENT SURVEY RESULTS

Since parental input has always been considered valuable at Norup, and since our current schedule reflects somewhat community attitudes, our team thought it was important and indeed essential to survey parents.

The survey was designed as a 30 item questionnaire similar to the survey instrument given to students. It was administered during our fall 1982 parent-teacher conferences. We were disappointed in the number of survey returned (forty-seven) representing less than 50% of the responses we expected. This small number was disappointing, because of our past experiences with large numbers of responses from parents in other survey situations.

In discussing the possible reasons for the small percentage of responses, we came to the conclusion that we erred in asking parents to fill out the questionnaires at conferences. Conference sessions at Norup are always crowded and busy. We think that perhaps the parents felt there was inadequate time to process information and conferences about their children with individual teachers, and consequently, there was insufficient time to respond to a questionnaire.

Our parental input, although limited, reveals some strong trends. Therefore we are including the results of parent survey in our findings. Results are shown for those responses which had more than a two-to-one ratio of agreement or disagreement. There were ten of each and all of them could be placed in one of three categories affecting students' learning - the teacher, learning styles, and schedule.

Two questions pertaining to the teacher elicited the most one-sided responses. Parents agreed (41-2) that students learned best when they like the teacher. They were overwhelming (41-1) in their disagreement that children learn best when they are with the same teacher all day.

There are parental agreement with six statements dealing learning styles. They thought that academic classes should be scheduled in the morning (29-14), and that students should be grouped by ability (38-6). They felt that students work best in a small-group situation (33-12), that classwork should be challenging (36-2), and that a great deal of oral discussion was helpful (42-3). There was also agreement that a great deal of supervision by the teacher is effective (30-10).

Three statements which drew heavy disagreement related closely to three of the statements drawing a positive response. Parents disagreed very strongly with statements that students work best when they work independently (43-2), when classwork is easy (38-7), and when academic classes were scheduled in the afternoon (39-1).

In the matter of scheduling, parents agreed (37-78) that students should have an activity period during the day and that academic and activity classes should be mixed (30-9). They thought (31-15) students would learn better if they had only one test per day.

Parents respondents disagreed with six statements dealing with scheduling. They were in total disagreement with the statement that classes should occur in a different order each day, (42-0). They also disagreed that students needed more time for science (33-14) social studies (31-11), or reading (31-15). There was similar disagreement with a statement that class

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periods should be shorter than 45 minutes (29-13). Parents felt that students should not be with the same group of students all day (36-7).

When we asked parents through open ended questions what promoted or inhibited learning for their children, the overwhelming response was the teacher. Parents felt that a highly motivated, energetic, challenging, sensitive and knowledgeable teacher was the critical variable which made the most significant difference in whether their child learned or not. Not withstanding any other factors parents looked to the teacher as having the greatest impact on learning.

CONCLUSION

Discussion and reflection on the raw data generated by the survey and interviews, an examination of the professional literature and the district's statement on middle school philosophy, and opportunities to discuss our work with researchers and teachers at national conventions and state universities have enabled us to process the information collected with deliberation and care. Based on our deliberations and interpretations of the data we have arrived at several conclusions in relation to our research questions.

1. How does the middle school philosophy affect scheduling? How does the schedule affect middle school philosophy?

   We could find no evidence to indicate that the middle school philosophy affects or is reflected in the current schedule. There is virtual agreement in the professional literature (Arnold, 1982; Egnatuck, et.al., 1979; ERS, 1977; Gatewood and Dilg, 1975; George; Kobut, 1980; Leeper, 1974; Michigan Department of education, 1979b) that the major characteristics of an effective middle school are: interdisciplinary team teaching, flexible scheduling, individualized continuous progress instruction, basic skills extensions, exploratory and enrichment studies, and a "teacher counselor" - advisor/advisee program. Other than activities period the major characteristics of the middle school are not found in the current Norup schedule.

   The Norup schedule is a "junior" high school schedule which is organized into standard fixed units of time. It lacks the flexibility to accommodate variable time blocks, interdisciplinary team teaching, and individualized continuous progress instruction. The schedule does not facilitate the implementation of a middle school philosophy of education.

2. What are the essentials of scheduling? What are the given and necessary conditions or the critical mass of personnel and resources required for an effective schedule?

An effective schedule for quality education is built around several essential elements: people, time and space; the learning needs of students; and a curriculum designed to meet the needs of students. The learning needs of students can change and the elements of people, time, space, and curriculum are alterable and can be organized into a number of different patterns.

Patterns of scheduling and organization will be limited to some extent by the people resources made available to provide instruction to a designated number of students in a given school. However, prescinding from the question of the present student-faculty ratio we conclude that Norup has adequate resources in terms of people, time, and space to mount a middle school program. What is required for a middle school program is a reorganization of people, time, and space to provide:

1. A flexible schedule with variable blocks of time.
2. Interdisciplinary team teaching
3. Individualized continuous progress instruction

Such a reorganization of resources assumes that a middle school program is more desirable than a "junior" version of high school and that there is a common shared "middle school belief system" among administrators and teaching staff.

3. How do district goals and curriculum affect scheduling in the middle school? How does the district time management model affect scheduling?

The data we collected suggested little relationship between the district's middle school philosophy and Norup's schedule. We could not identify any distinctive middle school characteristics in the district's staff development activities or time management model. We could find no staff development or school change efforts which came from the expressed needs of Norup staff or students.

District wide goals, curriculum, and staff development are generic in nature which is what they should be but accommodation also needs to be made to address the specific needs of teachers, students, and the community of a specific school such as Norup. The implementation of a middle school philosophy and schedule needs to take into account the context and circumstances of a specific school and its staff.

4. How can the school day be scheduled for the optimum intellectual and affective development of the middle school child at Norup Middle School?
5. How can the school day be scheduled to improve the quality of work life and the professional productivity and growth of teachers?

The school schedule touches upon almost every aspect of the school. It was not surprising, therefore, to find that our study of the schedule drew our inquiry to other dimensions of the school. Based on the findings of our multi-faceted research we have developed twelve recommendations which address the two major questions of our study. The twelve recommendations which follow reflect consideration, not only of the schedule specifically, but also of the interrelated and reciprocal aspects of the schedule, the curriculum, and approaches to instruction, staff development, and school change.

RECOMMENDATIONS

Based on the findings of our study, we recommend to the administration and faculty of Norup Middle School the following actions:

1. The process of collaborative action research should be applied in all future staff development and school change efforts. The collabora- tive process would allow teaching staff to have significant influence in selecting the agenda for school and curriculum change and give teachers ownership of change studies. Collaborative action research will provide the opportunity for school improvement and educational change through a bottom-up rather than a top-down approach.

2. Because scheduling is so complex and affects the quality of life for teachers and students in such profound ways, the scheduling process must reflect the full sustained and active participation of teachers. The process should be initiated by the last quarter of the school year. A scheduling committee, consisting of teachers using the action research process, should be established to develop and implement the 1984-85 scheduling. When the committee plans the schedule it should take into account the findings and recommendations of this report.

3. In order to construct schedules and an instructional program which would be qualitatively more beneficial for teachers and students, the following areas ought to be addressed through staff development:

    3.1 How to use small group instruction effectively in the classroom.

    3.2 How to adapt and use peer instruction effectively in the classroom.

    3.3 How to assess one's own teaching style and students' learning styles so they can be matched to promote more effective learning.

4. Several of the research findings can be implemented by means of team teaching. However, before team teaching is considered for implementation time should be allocated for staff development work dealing with the specifics of team formation and development of and maintenance of team effectiveness over time.

5. A developmental reading program is one of the major components of the middle school concept. Every middle school teacher is expected to teach reading. It is necessary that continuing staff development opportunities be provided for teachers to enhance their knowledge and instructional skills in reading.

6. Students and parents feel very strongly that individual student performance on tests would improve if students had only one test on any given day. Since the schedule at Norup is built around five academic subjects (mathematics, science, social studies, English, reading), we believe that the implementation of a weekly testing schedule is feasible and reasonable. For example, Mondays could be set aside for math tests, Tuesdays for science, etc. No major changes in teacher planning would be necessary.

7. Because children seem to learn best when involved in small groups and when helping others, we recommend the use of small group and peer instruction as major instructional approaches. These are easily accomplished in some classes such as science, but more small group and peer instruction could be incorporated into social studies, reading, English and even math.

8. Some children learn best in a particular way. For example, they enjoy lectures or discussions. Whenever possible and feasible we recommend attempts be made to match students learning styles with teaching styles and to vary instructional approaches.

9. If teachers are assigned to teach the same classes and content, then those classes should be scheduled back to back to provide smoother transition for teachers and to facilitate the most effective preparation and use of materials. Scheduling should be built around academic subjects first and then special interest activities should follow.

10. The current schedule does not give teachers shared time for preparing materials or accommodating students individually. Time should be built into the schedule for "collegiality", so teachers with similar interests can meet to share ideas, plan team instruction, develop curriculum, and work collaboratively. Teacher talents are best shared when there is a common period of time to collaborate with one another and materials, problems (student and curriculum), and ideas can be discussed and well organized.

    There are several ways this time could become an integral part of the Norup schedule. Teachers could have the same planning hour according to subjects and grades (ex. 6th grade English or 7th grade science). Seminar days could be spent in a similar manner for sharing of ideas and materials. The schedule could include a later starting time (weekly or monthly) for children so that teachers could meet, or there could be (weekly or monthly) early dismissal for teachers planning.

Staff meetings could begin as a general meeting and then adjourn to specific small group meetings.

11. Flexible schedules or flexible time for teachers and students should be investigated. This time could be accommodated in a variety of ways. There could be more flexible activity hours. Students could be assigned to a block of time and have the opportunity to make choices of activities during that block. Students need time for silent reading and reflection. The activity time-block might be assigned to a reading or homeroom teacher who could be responsible for students who would like to read or study. A permanent sub may be another way to gain flexibility in the schedule. We also suggest that parents and members of the community with special interests and hobbies might like to volunteer time to instruct an activity. We have a supportive community and we ought to involve members of the community in sharing their knowledge, experinces, and resources.

12. The Norup activity period is the best place to begin making some changes. Many staff members do not want to teach an activity. However, students and parents like and want the activity period. The middle school philosophy states activities should be an integral part of the schedule and the research we reviewd suggests that students at middle school level need activities.

Activities need to have definite objectives or goals, and they need to have a specific outcome or product. They could be based on academic areas such as handwriting, study skills, learning the computer keyboard, remedial math or philosophy for children. They could be alternated with other subjects or other activities. There could be seasonal activities such as kite building, wreathes or leaf collecting. Activities could be more flexible in terms of length of time for a certain class (5 days or 2 weeks), as well as time in the day (do they have to be 45 minutes?). The time students need for processing information, reflection and reading could be accommodated with a well organized structured, but flexible activity period. The activity period could also be used as a time for teachers to plan and work together to enrich student needs particularly if parents and members of the community were involved in conducting activity classes.

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APPENDIX E

SUPPLEMENTARY REPORTS

-701-

Initial Description of Participants and Sites

ARCS Report I

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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT I

INITIAL DESCRIPTION OF THE PARTICIPANTS AND SITES

An Interim Report

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REPORT I

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ACTION RESEARCH ON CHANGE IN SCHOOLS

Initial Description of the Participants and Sites

Introduction

This report is a descriptive summary of the teachers, researchers, and institutional settings participating in the Action Research on Change in Schools project (ARCS). The discussion will include: (1) information on school populations, cities, and districts; (2) personal information about the teachers; (3) academic background; (4) professional background and present positions; (5) personal and professional background of researchers; (6) research orientation and skills of teachers; and (7) teachers' perceptions of research and development.

Method

The information in this report follows the schema of the interactive Research and Development on Schooling (IR&DS) study conducted by Teachers College, Columbia University, in 1980-81 and the earlier interactive Research on Teaching (IR&DT) study conducted by Far West Laboratory (FWL) in 1977-78. Team researchers conducted open-ended interviews with the ten participating teachers, five teachers from the New Hampshire site on September 16 and 17, 1981, and five teachers from the Michigan site on September 18 and 23, 1981. The teachers also completed Educational Experiences Inventories and Research-Teaching-Development Questionnaires. Responses from the interviews, inventories, and questionnaires were summarized and the results provided the source of this descriptive report. New Hampshire and Michigan teachers have chosen aliases which will be used for identification in this and future reports. University researchers and research assistants will be referred to by their own names.

Narrative

The following discussion describes the participating teachers and the two sites. Details included will emphasize similarities and distinctions where such exist.

ARCS Project Sites

The first site, a junior high school in New Hampshire, has a total of 680 students in grades 7-8.

The New Hampshire site is located in a city which is a microcosm of America's largest cities. As one New Hampshire junior high school teacher put it, "We have all the ingredients of a large urban environment within a small community." The New Hampshire site has a stable middle class, an affluent population, and an economically disadvantaged population. Of the 680 students in the New Hampshire junior high school, about 15% qualify as economically disadvantaged under Title I. Approximately 7% of the New Hampshire junior high school students are Black, Indian, Hispanic, or Asian.

In 1977 a Teacher Corps project began in the New Hampshire junior high school. The school had not previously participated in any kind of special federally-funded project. It had, however, undergone radical internal organizational change in the years prior to the entrance of the Teacher Corps project. In 1976 a new principal had reorganized the 850 student junior high from a traditional departmental organization to a schools-within-a-school format to more adequately meet the needs of preadolescent students. The average age of the current teachers at the New Hampshire junior high school is 40.

In September, 1981, the principal resigned in order to accept an assistant superintendency in a larger New Hampshire city. The new principal was appointed in November, 1981. He had been a junior high school teacher at the site and also a House Coordinator of one of the schools-within-a-school.

The Michigan site is located in a school district near a major metropolitan area. There are 530 students in grades 6, 7, and 8. About 50% of the students come from upper middle class homes. Parents in the school area are active and verbal in their support of schools and their moral and attitudinal support has been very influential in the passage of school millages.

The Michigan site does not qualify for Title I aid. Its students score well on the Michigan Education Assessments Tests which are standardized competency tests administered in grades 4, 7, and 10. Approximately 50% of the students are Jewish, 10% Arabic/Chaldean, and 2% Black.

The Michigan site changed from a junior high school to a middle school in 1975-76 following extensive discussion and planning by administration and school staff. The average age of the staff is 40. In the past two years, as enrollments in the school district have declined, several elementary and senior high school teachers have been reassigned to the middle school on the basis of seniority. This reassignment of teachers has created changes in the school's schedule. Another change was the appointment of a new principal in 1980. The previous principal had been the only principal of this Michigan middle school since its beginning.

Personal Information about Teachers

Ten teachers have volunteered to participate in the ARCS project; five teachers from New Hampshire and five from Michigan.

Five of the teachers are male and five are female -- four males and one female in New Hampshire and one male and four females in Michigan. Two of the teachers are single, seven are married, and one is divorced. Of the married and divorced teachers, six have children. Five of the ten teachers report reading no professional periodicals; the remaining five teachers report reading a variety of teacher educational journals. All of the teachers read a wide variety of popular periodicals with Time, Newsweek, and local newspapers mentioned most frequently. Responses varied when asked about hobbies. Athletic interests such as running, racquetball, swimming, tennis, basketball, and bowling were mentioned. Home-centered activities included cooking, sewing, gardening, and a wide variety of crafts. Five of the teachers reported reading as a hobby. Tables I and II on pages 4 and 5 summarize this personal information about the teachers.

Academic Background of Teachers

All of the ten participating teachers have earned Baccalaureate degrees with an additional fifteen to thirty credits. Four teachers from New Hampshire and two teachers in Michigan have Masters degrees in the field of Education. Two of these teachers have earned fifteen credits beyond their Masters degrees. New Hampshire teachers earned their degrees from universities in New Hampshire or Maine. Four of the Michigan teachers earned their degrees from universities in Michigan; the remaining teacher, Florence, received her degree from a college in Mississippi.

Table I

New Hampshire ARCS Teacher Participants

Personal Background

cher	Marital Status	Number of Children	Periodicals Read		Hobbies
			Professional	Popular	
ooks nson	Married	0	Reading Teacher Journal of Reading Learning Magazine	Runners World Runner Boston Globe	Running Swimming Cooking Sewing Photography
l illams	Married	2	NTA NEA Journals	Boston Globe Life	Sports Reading Collecting coins Baseball cards
lot ewater	Married	2	None	Boston Globe Newsweek	Basketball Tennis
k D. t	Married	2	None	Consumer's Guide Newsweek Time Boston Globe	Real estate Chairman of Board of Selectmen Gardening
n en	Divorced	1	None	Reader's Digest Fish & Game Mass. Wild Life New York Magazine	Reading

Table II

Michigan ARCS Teacher Participants

Personal Background

Teacher	Marital Status	Number of Children	Periodicals Read: Professional	Periodicals Read: Popular	Hobbies
Jim Maki	Single	0	None	*Time* *Newsweek* *Runners World*	Running Racquetball Leaded glass Union activities
Anne Sulak	Married	2	*Today's Education* *NEA Journals*	*Time* *People* *Detroit News*	Camping Reading Gardening
Florence Cook	Single	0	Reads about 23 periodicals	*New Yorker* *Natinsionl* *Atlantic Monthly* *Ms.* *Time* *Detroit Free Press* *New York Times*	Reading Cooking Traveling
Lori Chapel	Married	0	*Today's Education* *NEA Journals* *English Journal* *Magazine for Gifted Learners*	*Better Homes & Gardens* *Good Housekeeping* *1001 Home Decorating Ideas* *Glamour* *Detroit News* *Detroit Free Press*	Reading Rug hooking Interior design Bowling
Jane Eyre	Married	4	None	*Time* *Games*	Collects antique porcelain dolls Bird watcher Collects rocks Sewing Building a house

When asked to make an assessment of their professional education, four of the five teachers in New Hampshire responded positively with comments such as, "well rounded, very good education," "very practical, prepared quite well." In Michigan, only Florence responded with a very positive comment ("Excellent"). Three of the Michigan teachers believed their education did not prepare them for teaching.

In summary, (1) all but four of the ten teachers have earned their Masters degrees; (2) New Hampshire teachers earned their degrees from universities in New Hampshire or Maine; Michigan teachers, with the exception of one, earned their degrees from universities in Michigan (see Tables III and IV on pages 7 and 8); and (3) interview data suggests that New Hampshire teachers assess their education more positively than the teachers from Michigan.

Professional Background and Present Positions of Teachers

The teachers' experience at the New Hampshire and Michigan sites ranges from three to twenty-three years. Their overall educational experience ranges from nine to twenty-three years. Using the criteria of five years or more of practice to indicate an "experienced teacher," all of the teachers are experienced.

Of the teachers from New Hampshire, only Jack has gained his entire teaching experience at this junior high. Brooks has an additional three years experience working with the mentally retarded and as an instructional assistant. Ted has twelve years experience outside of the New Hampshire site, mostly at elementary schools in Maine. This experience included coaching and a principalship. Elliot has four years of teaching and coaching experience at the secondary level in schools in Maine. John has eight additional years experience at the junior high level in schools in New Hampshire.

Three out of the five teachers from Michigan have gained their entire teaching experience at the Michigan middle school, ten, twelve, and twenty-three years. Jim taught the fourth grade for one year before joining the middle school and Jane has ten years experience at the elementary level, both schools located near the Michigan middle school.

Four of the five New Hampshire teachers teach one subject to one grade. One teacher teaches social

Table III

New Hampshire ABCS Teacher Participants
Educational Background and Research Orientations

Teacher	Education	Professional Experience	Previous Research and Training	Views Regarding Educational Research
Brooks	B.A. Nasson College Springvale, ME M.A. U of NH	1 yr. working with mentally retarded 2 yrs. instructional assistant, CONVAL Reg. School 6 yrs. Portsmouth JHS	Title I, educational background in experimental design and methods, writing of grants	Topics are too narrow Wonder whether it can be duplicated Teachers need more time to do their own research
Ted	B.S. U of Maine M.A. U of Maine	10 yrs. elementary schools in Maine 2 yrs. principal, Atlantic Heights School, NH 3 yrs. Portsmouth JHS	Developed reading and sports programs	No information available
Elliot	B.S. U of Maine M.A. U of SO Maine	4 yrs. secondary schools in Maine 7 yrs. Portsmouth JHS	Mathematics Accountability Testing Committee Independent research on teacher learning style	Improve education Teachers should do the research
Jack	B.A. U of Maine Orono M.A. U of Maine Portland	17 yrs. Portsmouth JHS	Project funded to investigate school problems Teacher Corps project	Improve level of education Identify a problem and not talk in generalities Waste of time if doesn't result in effective change
John	B.A. U of NH	8 yrs. junior high schools in NH 11 yrs. Portsmouth JHS	Development of own courses Teacher Corps project TRACT program	No impressions

Table IV

Michigan ARCS Teacher Participants

Educational Background and Research Orientations

Teacher	Education	Professional Experience	Previous Research and Training	Views Regarding Educational Research
Jim	B.S. U of MI M.A. Eastern U 2 classes short of M.Ed.	1 yr. elementary school 8 yrs. Norup	Skills Diffusion program Generic skills	Very suspicious Needs to be looked at very carefully Has too many variables
Anne	B.A. U of M + 18 credit hrs. in Ed.	10 yrs. Norup	Generic skills Science curriculum development	Sounds abstract Not something able to use or meaningful Should have teachers more involved
Florence	B.A. Blue Mt. College - MS + 18 credit hrs.	23 yrs. Norup	Curriculum planning Inservice training programs	Researchers telling teachers what to do Teachers should define the problems
Lori	B.S. Eastern MI M.A. Eastern MI	12 yrs. Norup	Steering Committee K-8 English Coordinator Leadership training Chairperson of professional staff development Generic skills	Researchers defining problem Can't generalize from one situation to next Teachers should define
Jane	B.A. Oakland U + 30 credit hrs.	10 yrs. elementary school 6 yrs. Norup	Generic skills	No impressions Should involve teachers

studies, one teaches science, and two teach math. All of them teach at the eighth grade level. The remaining teacher teaches seventh and eighth grade reading.

Of the Michigan teachers, only one teacher, Florence, teaches a single subject, English, to the seventh and eighth grades. Jim teaches reading, math, and history at the sixth, seventh, and eighth grade levels. Anne teaches science and reading to seventh and eighth graders. Lori teaches English and reading at the seventh and eighth grade levels. Jane teaches science, math, reading, and art to sixth and eighth graders.

In summary, it can be concluded that: (1) all ten of the teachers are experienced; (2) the teachers' experience included work at the elementary and secondary levels; (3) the New Hampshire teachers have a total of twenty-seven years experience outside of the New Hampshire junior high; two gained this outside experience in Maine; (4) the teachers from Michigan, for the most part, have gained all of their experience at the Michigan middle school; the exceptions have taught in schools in the immediate geographic area; (5) the teachers from New Hampshire all teach one specific subject and only one teacher teaches more than one grade level; and (6) of the teachers from Michigan, only one teaches one specific subject while the remaining teachers have as many as four subjects to teach. All of the Michigan teachers teach two or three grade levels (see Tables III and IV on pages 7 and 8).

Background of Researchers and Research Assistants

Personal and professional background of the university researchers and research assistants on the ARCS teams is presented in Tables V and VI on pages 10 and 11.

The New Hampshire and Michigan researchers (Sharon N. Oja and Gerald J. Pine) conceptualized the ARCS project and act as co-investigators of the collaborative action research process study. The New Hampshire researcher, in addition, is director of the ARCS project and runs the project office at the University of New Hampshire. Both researchers are highly experienced in their university roles as developers in the formulation and implementation of inservice education programs. They have worked together in this capacity in a prior two-year federally funded project. Both Oja and Pine are also skilled in quantitative and qualitative research methodologies. The university researchers pro-

Table V

Personal Background of Researchers

Researcher	Marital Status	Number of Children	Periodicals Read		Hobbies
			Professional	Popular	
Michigan					
Gerald J. Pine	Married	3	American Psychologist Personnel & Guidance School Counselor Chronicle of Higher Education Journal Counseling Psychologist Journal of Staff Development American Educational Research Journal Personality and Social Psychology	Runners World Time National Geographic Atlantic Harpers New York Times Detroit Free Press Education Weekly	Running Reading
Sally Whitty	Married	1	None	People Time	Horseback riding Arts and crafts Gardening
New Hampshire					
Sharon N. Oja	Married	0	Review of Educational Research Educational Researche Theory Into Practice Journal of Teacher Education Action Journal of Staff Development	New Shelter Psychology Today Ms. Organic Gardening National Geographic Smithsonian Education Weekly Chronicle of Higher Education	Jogging Skiing Sailing Gardening
Lisa Smulyan	Single	0	Harvard Educational R. Phi Delta Kappan	Ms. Time	Reading Tennis Cooking

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Table VI

Educational and Professional Background of Researchers

Researcher	Education	Experience	Previous Research and Training
Michigan			
Gerald	B.A. Boston College M.Ed. Boston College Administration Ed.D. Boston University Counseling Psy.	7 yrs. public school teaching and counseling 16 yrs. higher education professor and administrator 3 yrs. Director, Teacher Corps 3 yrs. Director, EPDA program	Research training at Masters and Doctoral levels Research publications Monographs and articles
Sally	B.S. Oakland University (expected April 1982)	2 yrs. Sales Training and Recruiting	Research assistant - Psychology Research assistant - Education
New Hampshire			
Sharon	B.A. Macalester College M.A. University of MN Ph.D. University of MN	3 yrs. high school math teacher 2 yrs. college math instructor 7 yrs. Director, Peer Teaching in Math and Science program 2 yrs. university teacher trainer 5 yrs. university assistant professor of Education	Research assistant - Educational Research and Development Evaluator - teacher education projects Research publications, studies BEH Study
Lise	B.A. Swarthmore College M.A.T. Brown University Ed.D. Harvard University (in progress)	3 yrs. seventh grade teaching 3 yrs. Methods Instructor Brown University M.A.T. program 2 yrs. Study Skills consultant	Curriculum development, English and social studies KIE moral development study at Harvard University Other research related to doctoral work

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vide research orientation, assistance, and training to the action research teams. They facilitate the team meetings and conduct interviews with individual team members.

The research assistants' (Lisa Smulyan and Sally Whitty) main task is to document the ARCS team meetings. In addition, they assist in any questions of research design and methodology and aid in related library research. The New Hampshire research assistant has experience in middle school teaching; the Michigan research assistant has not. Both have had previous research assistantships on other research projects (see Table VI on page 11).

Research and Training Experiences and Orientations of Participating Teachers

During the interviews and in questionnaires the ARCS participants were asked a series of questions to determine the following: (1) who they consult when needing help with a professional problem, (2) pressing problems facing educators today, (3) participation in prior research and training activities, (4) perceptions of educational research, and (5) each individual's perceived skills in research and development in teaching.

When asked who they consult when needing professional assistance all but one of the New Hampshire teachers responded that they talk to other teachers; also mentioned were union leaders and the administration. Only one teacher couldn't remember having a professional problem, adding that other people usually consult him. The teachers from Michigan responded that they seek the advice of other teachers; several mentioned the principal and/or counselors, and one teacher reported consulting relevant literature.

During the first team meeting, teachers completed a Problem Identification Questionnaire on which they listed five problems facing educators today. The responses are reported in Tables VII and VIII on pages 13, 14 and 15). Six of the ten teachers report lack of money as being a problem. Four teachers saw discipline as being a problem and several mentioned scheduling, administration, and declining enrollments as being problems. Other problems mentioned were student achievement, lack of faith in schools by society, morale of staff, and demands on teachers' time.

Table VII

New Hampshire ARCS Participants

Problem Identification Questionnaire

Teacher	Problem Facing Education Today	Agreement Among Peers			
		Less than 25%	25-50%	50-75%	Over 75%
Brooks	(1) Scheduling - selecting specific student for a particular time slot and number of minutes for instruction			X	
	(2) Discipline - handling classroom problems				X
	(3) Coordinating curriculum w/other faculty		X		
	(4) Dealing w/administrative decisions - little faculty input			X	
	(5) Working w/stress of constant change				X
Ted	(1) Student control (2) Meeting individual needs of students (3) Lack of faith in schools by society (4) Financial problems facing schools and teachers (5) Decline in learning taking place - (lower achievements) (6) Lack of resource people	No information available			
Elliot	(1) Society at large is in period of upheaval, change. The new order, and school's role, is uncertain				X
	(2) Efforts to make teachers accountable tend to lessen importance of student responsibility			X	
	(3) Society provides no alternative to school for the adolescent save prison/detention centers		X		
	(4) Increasing pressures to schools to assume duties traditionally reserved for home/parents				X
	(5) Large number of teaching positions are being eliminated because of declining enrollments			X	
Jack	(1) How to improve morale of staff			X	
	(2) Develop better trusting relationship between staff and administration			X	
	(3) Make more money and people available to teach disadvantaged		X		
	(4) Figure out a way to have a stable schedule without changing it every year				X
	(5) Improve the working conditions and salaries			X	

(continued)

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Table VII (continued)

Teacher	Problem Facing Education Today	Agreement Among Peers			
		Less than 25%	25-50%	50-75%	Over 75%
John	(1) Working w/office on problem students in classroom		X		
	(2) Working as a subject team teacher	X			
	(3) Handling I.E.P students in classroom				X
	(4) Working in a total team teaching situation		X		
	(5) Coordinating discipline among all teachers in a team	X			

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Table VIII

Michigan ARCS Participants
Problem Identification Questionnaire

Teacher	Problem Facing Education Today	Agreement Among Peers: Less than 25%	25-50%	50-75%	Over 75%
Jim	(1) Funding of education/decisions?				X
	(2) Re-assignments of teachers			X	
	(3) Curriculum changes/start to implement			X	
	(4) Demands on teachers' time			X	
Anna	(1) Changing enrollment (dwindling enrollment)			X	
	(2) Large numbers in the classroom				X
	(3) Teachers teaching "out" of their field (less qualified)				X
	(4) Less money for education (materials, teachers, etc.)			X	
	(5) "Older" teaching staffs (less new teachers, new ideas)		X		
Florence	(1) Money				X
	(2) Staffing			X	
	(3) Curriculum			X	
	(4) Discipline				X
	(5) Scheduling			X	
Lori	(1) Lack of respect by the general public for the teaching profession				
	(2) Lack of parent accountability				
	(3) Increasing roles that teachers are required to fill in the classroom				
	(4) General lack of professionalism among teachers				
	(5) Decreasing financial support in line with declining enrollments				
Jane	(1) Back to basics movement and classroom conflicts	No information available			
	(2) Much of school is boring for kids - learning should be exciting				
	(3) Kids don't apply their best brainwork to school work				
	(4) Assimilation of foreign born children is difficult for them, peers, and teachers				

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When New Hampshire teachers were asked about prior research experience, Brooks responded that she has taken several experimental design and methods courses and has used that experience to write several grant applications. Ted reported being involved in the development of reading and sports programs. Elliot has conducted a large amount of independent study on teacher learning style and has also served on a Mathematics Accountability Testing Committee. Jack participated in the Teacher Corps project and was involved in a project funded to investigate school problems and school organization. John reported no prior research experience other than developing his own courses. When asked to rate their satisfaction with their inservice training or staff development, Brooks indicated being very satisfied, Elliot, Jack, and John reported being moderately and not very satisfied. The remaining teacher, Ted, reported being between moderately and not very satisfied. Teachers were also asked to rate their success as a participant in staff development between very successful and moderately successful. Teachers Jack and John reported being moderately successful.

When Michigan teachers were asked about prior research and training activities, all of the teachers reported having no formalized research experience. They did report numerous inservice and development programs. All but one of the teachers participated in the Generic Skills program. Jim has also participated in a Skills Diffusion program. Anne, in addition to generic skills, has participated in science curriculum development. Florence reports participation in numerous inservice training programs and curriculum planning projects. Lori has participated in Leadership Training, Steering Committees, has been Chairperson of Professional Staff Development and K-8 English Coordinator in addition to generic skills. Jane reports generic skills as her only inservice experience. When asked to evaluate their satisfaction with inservice training, Jim and Lori rated it between very satisfied and moderately satisfied; Anne, Florence, and Jane reported being moderately satisfied. When asked to rate their success as a participant in staff development, Jim, Anne, and Lori rated it between very successful and moderately successful; Florence and Jane reported being moderately successful.

When teachers were asked their impressions regarding educational research, responses from both sites were similar and generally negative. Comments such as "topics are too narrow," "waste of time if it doesn't result in effective change," "needs to be looked at very carefully," and "not something able to be used" were voiced by teachers from both sites. Two of the teachers had no impressions. When asked how educational research can be improved, two teachers from New Hampshire and four teachers from Michigan indicated that teachers should be the ones to define the problems and do the research. There was a general feeling of not wanting "researchers telling teachers what to do."

In summary, it can be concluded that: (1) participating teachers, for the most part, consult colleagues when needing help with a professional problem, while several, in addition, consult administrators and counselors; (2) teachers most frequently mentioned lack of money as a problem in education today, along with scheduling, administration, and declining enrollments; (3) two of the ten teachers report experience with systematic research; (4) all ten of the teachers report participation in inservice training and staff development programs; (5) teachers from both sites are on the average moderately satisfied with their inservice experience and rate themselves as moderately successful; (6) teachers from both sites generally had negative impressions regarding educational research; and (7) six teachers believe that to improve educational research, the teachers should be more involved by defining and researching the problems (see Tables III and IV on pages 7 and 8).

Research Skills of Participating Teachers

During the third team meeting, the teachers were asked to complete a Research-Teaching-Development Skills questionnaire designed to determine how skilled they perceive themselves to be in research and development on schooling (see Table IX). Each participant was asked to indicate their degree of proficiency by checking either highly skilled, somewhat skilled, or no skill. There was also a space provided to indicate a familiarity with content but no skill.

Overall, few teachers from either site indicated being highly skilled in any areas. Of the fifty-seven questions, only nine received highly skilled responses and these responses were given by only three or four of the participants. Four teachers indicated being highly skilled to the following questions:

#42 Ability to diagnose an individual student's status in attainment of the basic skills
#52 Ability to sequence learning activities to facilitate learning in curriculum or set of curriculum

In addition, three teachers indicated being highly skilled to the following questions:

- #10 Ability to make a distinction between an objective observation and a personal reaction to what is observed
- #18 Ability to use library research techniques (e.g., indices of periodicals)
- #33 Ability to record classroom events accurately and objectively
- #34 Ability to determine relations between teaching behavior and student behavior
- #43 Ability to apply knowledge of individual students' abilities to the formulation of a program of instruction
- #46 Ability to individualize instruction
- #49 Ability to state student learning objectives in measureable terms

Teachers tended to agree on the areas in which they lacked skill. Seven to nine of the teachers reported having no skill in the following areas:

- # 4 Ability to operationalize a research sign into specific research procedure
- # 8 Ability to select appropriate standardized tests or instruments
- #13 Ability to construct instruments to assess attitudes and other affective variables
- #16 Knowledge of instrument reliability, including types of reliability coefficients
- #17 Knowledge of instrument validity, including various approaches to determining validity
- #21 Ability to conduct item analysis, including computation of difficulty and discrimination indices
- #22 Ability to choose appropriate statistical techniques for data analysis

At least five of the ten teachers indicated that they had no skill on an additional 13 questions although at least one or two teachers indicated familiarity with the content of the item. Most of these questions involved research design and statistical procedures.

Teachers from both sites gave similar responses to most questions; generally neither team indicated being more highly skilled or less highly skilled in any one area. When the majority of the teachers indicated having no skill to a specific question, there were at least one or two teachers indicating some skill or high skill.

In summary, it can be concluded that: (1) none of the teachers consider themselves to be highly skilled in the area of research and development in schooling, (2) the majority of the teachers perceive themselves to be somewhat skilled in teaching and developmental areas, (3) the greatest weakness is perceived as being in the area of research design and statistical methods, and (4) neither school is perceived as being more highly skilled than the other (see Table IX on pages 20-23).

Teachers' Perceptions of the Nature of Action Research on Change in Schools

All of the participating teachers were asked a series of questions during the initial interviews related to their perceptions of the nature of Action Research. The questions addressed the following concerns: (1) purpose of the Action Research project, (2) role expectations as a team member, (3) benefits they see for themselves and their institutions, (4) motivation for agreeing to participate, and (5) potential problems they see in this experience.

When asked about the purpose of Action Research, New Hampshire teachers mentioned problem identification, analysis of a problem, and reaching conclusions about the problems. One teacher mentioned being able to generalize identification of the problem to other schools and one teacher believed it would establish a dialogue in the school. Teachers from Michigan perceived Action Research as studying how change evolves or as identification of a problem, having help solving it, and sharing with other teachers. Role expectations from teachers from both sites focused on sharing talents, ideas, and abilities with team members and a desire to do a good, sincere job.

Regarding benefits for themselves or institutions, teachers from both sites indicated a chance for personal growth by statements such as, "help me put some things together," "better person to make decisions," "a chance to improve." Teachers also mentioned helping improve the quality of education: "help me become a better educator," "meet some of the needs of the pupils," "will carry over to the classroom," and "help

w Hampshire JHS = NH
ichigan HS = M
otal = T

Table IX

Research-Training-Development Skills Questionnaire*

Question	Highly Skilled			Somewhat Skilled			No Skill			Familiar with Content, but No Skill		
	NH	M	T	NH	M	T	NH	M	T	NH	M	T
) Knowledge of general principles of research design	1	0	1	2	3	5	1	2	3	0	0	0
) Knowledge of experimental and quasi-experimental designs	1	0	1	1	1	2	2	4	6	1	0	1
) Knowledge of factors which jeopardize internal and external validity of research design	0	0	0	3	2	5	2	3	5	1	1	2
) Ability to operationalize a research design into specific research procedures	0	0	0	2	1	3	3	4	7	0	1	1
) Ability to identify and articulate a researchable problem	1	0	1	3	3	6	1	2	3	0	0	0
) Ability to formulate testable hypotheses or researchable questions	1	0	1	3	4	7	1	1	2	0	1	1
7) Knowledge of specific questionnaire construction techniques	1	0	1	0	3	3	3	1	4	1	0	1
8) Ability to select appropriate standardized tests or instruments	1	0	1	1	1	2	3	4	7	0	0	0
9) Knowledge of sampling theory and techniques	1	0	1	1	1	2	2	3	5	1	0	1
0) Ability to make a distinction between an objective observation and a personal reaction to what is observed	2	1	3	2	3	5	1	1	2	0	1	1
1) Ability to plan data collection procedures appropriate to a research or evaluation activity	0	0	0	3	1	4	2	3	5	0	2	2
2) Ability to plan and conduct interviews for the purpose of collecting data	0	0	0	2	3	5	3	2	5	2	1	3
3) Ability to construct instruments to assess attitudes and other affective variables	0	0	0	0	1	1	5	4	9	1	1	2
4) Ability to identify bias and/or prejudices in written reports of classroom events	0	0	0	4	4	8	1	1	2	0	0	0
15) Ability to use formal or informal systems of recording observations of behavior	2	0	2	2	3	5	1	2	3	0	0	0

*Adapted from Tikunoff, W. J., Ward, B. A., & Griffin, G. A. Interactive Research and Development on Teaching Study: Final Report. San Francisco: Far West Laboratory for Educational Research and Development, 1979.

(continued)

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Table IX (continued)

Question	Highly Skilled			Somewhat Skilled			No Skill			Familiar with Content, but No Skill		
	NM	M	T	NM	M	T	NM	M	T	NM	M	T
) Knowledge of instrument reliability, including types of reliability coefficients	0	0	0	2	0	2	3	5	8	0	1	1
7) Knowledge of instrument validity, including various approaches to determining validity	0	0	0	2	[illegible]	2	3	5	8	1	1	2
) Ability to use library research techniques (e.g., indices to periodicals)	1	2	3	3	2	5	1	1	2	0	1	1
) Ability to use ERIC or other information retrieval systems	1	0	1	1	2	3	3	3	6	0	1	1
) Ability to establish criteria for evaluating research	0	0	0	1	1	2	3	2	5	2	0	2
) Ability to conduct item analysis, including computation of difficulty and discrimination indices	0	0	0	1	0	1	4	5	9	2	1	3
) Ability to choose appropriate statistical techniques for data analysis	0	0	0	2	0	2	2	5	7	1	1	2
) Knowledge of descriptive statistical techniques (e.g., means, standard deviation, correlations)	2	0	2	0	1	1	2	4	6	1	2	3
) Ability to generalize from a set of discrete statements or conclusions	0	0	0	3	4	7	2	1	3	0	0	0
) Ability to use standardized ("canned") computer programs (e.g., SPSS)	0	0	0	1	2	3	3	2	5	2	0	2
) Ability to read and interpret computer output	0	0	0	2	2	4	3	3	6	1	1	2
) Ability to interpret and integrate statistical data into a meaningful presentation	0	0	0	2	3	5	2	2	4	2	0	2
) Ability to organize and classify information into meaningful categories	1	1	2	2	3	5	2	1	3	0	1	1
) Ability to use editorial skills on one's own writing or that of others	1	1	2	1	3	4	3	1	4	0	0	0
) Knowledge of alternate methods of presenting data (e.g., graphs, tables)	0	0	0	4	2	6	1	3	4	0	1	0

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Table IX (continued)

Question	Highly Skilled			Somewhat Skilled			No Skill			Familiar w Content, b No Skil		
	NM	M	T	NM	M	T	NM	M	T	NM	M	T
31) Ability to lead group discussions, moderate meetings, or facilitate constructive interactions among personnel	0	2	2	5	1	6	0	2	2	0	0	0
32) Ability to analyze critically a person's teaching behavior	0	2	2	3	1	4	2	2	4	0	1	1
33) Ability to record classroom events accurately and objectively	1	2	3	4	2	6	0	1	1	0	1	1
34) Ability to determine relations between teaching behavior and student behavior	0	3	3	5	1	6	0	1	1	0	0	0
35) Ability to identify patterns of teaching behavior from a transcript of teacher-student talk	0	2	2	2	2	4	3	1	4	0	1	1
36) Ability to distinguish between a classroom problem and a symptom of that problem	1	1	2	2	3	5	2	1	3	1	0	1
37) Knowledge of techniques of classroom observation	0	1	1	4	2	6	1	2	3	0	1	1
38) Knowledge of procedures and steps in developing curriculum materials	1	0	1	2	3	5	1	2	3	1	0	1
39) Knowledge of at least one curriculum model	0	1	1	1	2	3	3	2	5	2	1	3
40) Knowledge of various instructional approaches that might be incorporated into curriculum materials	0	2	2	4	2	6	1	1	2	0	0	0
41) Ability to use field-testing techniques during preliminary tryout or implementation of new curriculum materials	0	0	0	1	2	3	3	3	6	3	1	4
42) Ability to diagnose an individual student's status in attainment of the basic skills	0	4	4	4	0	4	2	1	3	1	1	2
43) Ability to apply knowledge of individual students' abilities to the formulation of a program of instruction	1	2	3	2	2	4	2	1	3	0	0	0
44) Ability to plan instructional sequence for a small group of students (4-8) in social studies	1	1	2	1	3	4	2	1	3	1	0	1
45) Ability to coordinate several instructional units for use by groups of students at about the same time	0	1	1	4	3	7	1	0	1	1	0	1

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Table IX (continued)

Question	Highly Skilled			Somewhat Skilled			No Skill			Familiar wit Content, but No Skill		
	[illegible]	M	T	[illegible]	M	T	[illegible]	M	T	[illegible]	M	T
46) Ability to individualize instruction	1	2	3	3	2	5	1	1	2	1	0	1
47) Ability to prepare instructional materials appropriate to a student's developmental level	0	1	1	4	3	7	1	0	1	0	0	0
48) Knowledge of at least one major theory of learning	1	0	1	3	5	8	1	0	1	0	0	0
49) Ability to state student learning objectives in measurable terms	2	1	3	2	3	5	1	1	2	0	0	0
50) Knowledge of techniques for assessing student achievement in relation to behavioral outcomes	0	0	0	2	3	5	2	1	3	1	0	1
51) Knowledge of systems developed to categorize human behavior or abilities (e.g., Bloom's taxonomy)	0	1	1	2	3	5	3	1	4	0	1	1
52) Ability to sequence learning activities to facilitate student learning in curriculum or set of curriculum materials	1	3	4	2	2	4	2	0	2	0	0	0
53) Ability to identify and articulate the objectives of the activity or institution	1	1	2	2	4	6	2	0	2	0	0	0
54) Ability to identify and articulate the formal and informal decision-making process in the school	2	0	2	2	3	5	1	2	3	0	0	0
55) Ability to analyze norms and values in the school	1	0	1	3	2	5	1	3	4	0	1	1
56) Ability to analyze patterns of communication among teachers and administrators in the school	1	1	2	3	1	4	1	3	4	0	1	1
57) Ability to identify patterns of change in the school	1	0	1	2	2	4	2	3	5	1	0	1

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students achieve better." Perceived benefits for institutions were less optimistic. Comments in both sites included "unpredictable for school," "for large part of school no benefits." Only one teacher from New Hampshire and one from Michigan believed it would have an effect on the rest of the school. One teacher from New Hampshire believed it could be generalized to other schools.

When asked about their motivation for participating, teachers from New Hampshire indicated that they derived pleasure and enjoyment from such activities. One teacher responded that it sounded like an interesting challenge. Three of the five teachers from New Hampshire indicated that they had extra time to participate in such a project.

Three of the five teachers from Michigan agreed to participate because they believed the project would enable them to explore and incorporate innovations in education which would make them more effective teachers. As Lori stated, "I'm determined not to fall into the rut of an experienced teacher whose most effective teaching tool is the file cabinet." Jane responded that she believed this project can make a difference -- "not filed and forgotten." She also mentioned that the principal was anxious to have teachers participate.

When teachers from New Hampshire were asked about potential problems, their major concerns were individual personality conflicts, the role that the new principal would have, and having an entrenched faculty. One teacher perceived no potential problems. Three teachers from Michigan perceived time as being the major concern. One teacher envisioned potential problems from other staff members and one teacher saw no potential problems.

To summarize, (1) the majority of the participating teachers perceived Action Research as identifying and solving a school-related problem, (2) role expectations were generally the sharing of talents and ideas, (3) teachers from both sites indicated the project would benefit them personally and professionally, (4) teachers from both sites were somewhat skeptical about benefits for their institutions, (5) teachers from New Hampshire were motivated to participate mainly for enjoyment and because they had extra time, (6) teachers from Michigan agreed to join for professional exploration and effectiveness, (7) New Hampshire teachers were concerned about staff and personality conflicts, and (8) Michigan teachers were mostly concerned about time availability (see Tables I and II on pages 25 and 26).

Table X

New Hampshire Teachers' Perceptions of ARCS

Teacher	Purposes of ARCS Project	Benefits for Themselves and Institutions	Motivation for Participation
Brooks	Establish dialogue in school - need to talk about a lot of things, document it so hopefully it won't happen again	To put some things together in my life - it would look great on a resume - mentally like to keep active	Enjoyed involvement in Teacher Corps project - trying to discover effects that changes have on me - don't seem to be able to cope with all the changes
Ted	We're going to focus on something that all of us have a deep caring for - analyze a problem and maybe reach some conclusion about it - something that will make you a better teacher, maybe a better person, and will meet at least some of the needs of people	Hope to have a close working relationship which will carry over into the school and classroom - meet some of the needs of some of the pupils - not be something abstract or something to be filed away	Have the time and leisure to participate in a research project
Elliot		Participation in a project like this is useful and helpful for participants and for their students - for the school a limited benefit - represent 10% of the staff and 10% of the students	Derive pleasure from such activities - skillful in such activities - can make significant contributions
Jack	Look at some of the problems that maybe are unique to this school but also effect junior high education throughout the country - publish something to other junior highs that have similar problems	Generalize to other schools - just participating, sitting and talking with other people, getting other ideas	Sounds like an interesting challenge - can do it now because outside school commitments are fewer
John	Honestly not sure - assume it would be on our daily dealing with students and dealing with teachers within our particular area - trying to find help with the problems	Sharing ideas can't help but help - some of the school will benefit, for a large group of the school, no, because we are a very entrenched faculty	Enjoy teaching junior high students - many changes, good and bad - many ideas of how to improve - have the time now

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Table XI

Michigan Teachers' Perceptions of ABCS

Teacher	Purposes of ABCS Project	Benefits for Themselves and Institutions	Motivation for Participation
im	Difficulty with term at this point - interpret it as something to do with change - taking a look at how change takes place - try to change things toward a positive light	Make me a better person to make decisions about the school and the influence I can have here - effect on school depends on carryover - not sure what can happen for Norup	Have been involved in transition from junior high to middle school, would like to look more closely at those items that cause change
[illegible]	Getting people in touch with change that's going on - see it as a way to work on a problem that I might want to attack, do something about that problem, working with children, educating them	Good way to realize some sort of improvement or growth - learn from others and share my ideas with them	Means of incorporating new or changing methods in classroom - stage in life and teaching when change is necessary
lorence	Looking at problems in classroom situation - working on it so its no longer a problem - teachers being able to tell researchers what problems are	Hope that I would be able to handle things better than I do now, chance to find out that I'm really doing things the right way - having some effect on rest of staff - they seemed interested because we were interested	Would like to explore new approaches to presentation of language to students - explore possibilities of being more effective
ri	Look at the problem first and research it afterwards - teachers defining and researching a problem - letting me or helping me figure out what to do to meet my own needs	Interesting topics to explore for a doctorate - ties in with generic skills exploring stressful situations and maybe solving them to a certain degree, identify real problems in school	Always interested in hearing about innovations in education which will make me a more effective teacher - the word change interested me, change is key word to Berkly School District - determined not to fall into the rut of an experienced teacher whose most important teaching tool is the file cabinet
e	Thought someone was doing it to get a doctorate - now understand it to be how a change can evolve in school	Learn and read more - personal growth - help students achieve better	Think that this program can make a difference - too many development programs are filed and forgotten - I want to change

Conclusion

This report describes the institutional contexts and teacher and researcher participants of the ARCS project. Personal information, academic background, professional background, present positions, research orientation, research skills, and perceptions of Action Research have been summarized for each teacher. This is the first of several reports documenting aspects of the Action Research on Change in Schools project. Upcoming reports include: a description of the content of the first eight team meetings, and an analysis of the process of collaboration during the first eight meetings as each team identifies a research problem.

Life Age/Cycle Characteristics of Teachers

ARCS Report VIII

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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT VII

LIFE AGE/CYCLE CHARACTERISTICS OF ARCS TEACHERS

Sharon Nodie Oja

Sharon N. Oja
Gerald J. Pine

Principal Investigators

Preface

This preliminary report will describe the relationships between ten middle/junior high school teachers' ages and life cycle phases and their problems, dilemmas, tasks, and personal reasons for participating in a collaborative action research project, Action Research on Change in Schools (ARCS).

Between September and December, 1981, each of the ten teachers was observed during the eight meetings of the two collaborative action research teams. Each teacher also participated in two in-depth semi-structured interviews and completed a written questionnaire called the Educational Experiences Inventory*. Tape recordings of the meetings and interviews were transcribed and used as an additional data source for this report. Each teacher kept a written log or journal over this time period, and these logs were used as a final source of data. On the basis of the observations, logs, interviews and introductory questionnaire data, profiles of each of the ten teachers were constructed.

Action Research on Change in Schools (ARCS) is a two year collaborative action research project undertaken by two groups of middle/junior high school teachers, one in Michigan and one in New Hampshire.

Previous reports #1-6 are available from the ARCS project office in Morrill Hall, University of New Hampshire, Durham, New Hampshire.

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*The Educational Experiences Inventory used in this study (see Appendix A) was adapted from one developed by Rita Weathersby (1977).

LIFE AGE/CYCLE CHARACTERISTICS
OF ARCS TEACHERS

Introduction and Overview

Roger Gould (1978), Daniel Levinson, et al. (1978) and Gail Sheehy (1974, 1976) describe the relationships between adults' ages and their problems, dilemmas, tasks, and personal concerns. (See Table 1.) Using primarily clinical/biographical data,* their work suggests a pattern of adult tasks beginning with the "transition from adolescence to adulthood" during the late teens and early 20s (age 16-18 to 20-24); moving into the 20s for a period of "provisional adulthood and initial commitments" (early 20s to 27-29); then into a transition "age-30 crisis" of examination and questioning (late 20s - early 30s), resulting in a change or reaffirmation of initial commitments. The 30s are a period of "settling down" (early 30s) and of becoming one's own person (35-39 to 39-42). A "mid-life transition" involving another round of major questioning about priorities and values occurs in one's early 40s with the realization that time is finite and success and achievement have limitations. This results in a "restabilization period" (around age 45) with further investment in personal relationships. Transitions in the 50s are followed in the 60s by restabilization often marked by pleasingly mild and gentle reactions to life's experiences and/or a vigorous sense of flourishing.

In addition to age-related dilemmas and issues suggested by the literature in adult phases of the life cycle, there may be particular dilemmas and age-related issues specific to the teaching profession. In the following introduction and overview of life phases of ARCS teachers, mention is made of dilemmas and issues general to adults and those perhaps particular to teachers.

"Getting into the adult world" encompasses the early 20s to age 27-29. At this time the adult is concerned with exploring new options in the adult world in

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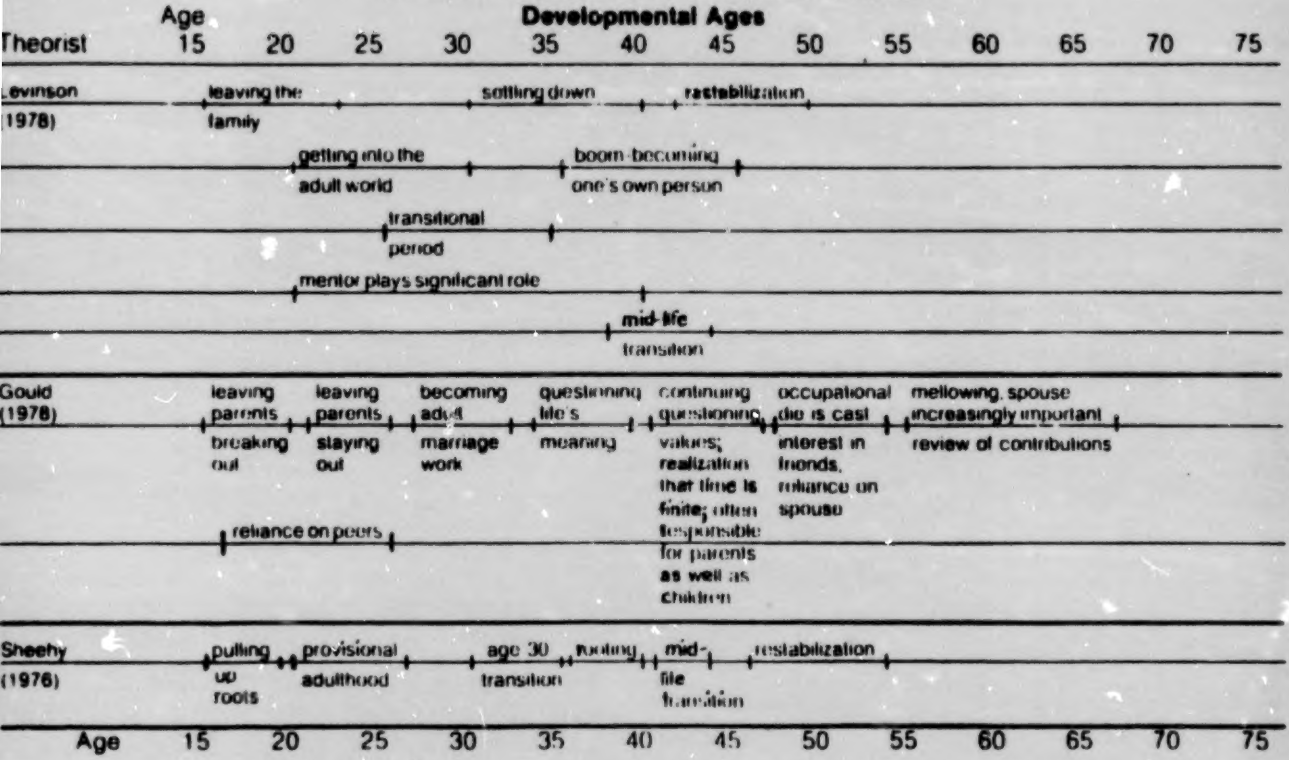
*A limitation of this work is that most of the data is from primarily white, middle-class males, although Sheehy's work does include interviews with women.

TABLE 1 — DEVELOPMENTAL TASKS *



Theorist	15	20	25	30	35	40	45	50	55	60	65	70	75
Levinson (1978)	leaving the family			settling down		restabilization							
		getting into the adult world			boom-becoming one's own person								
			transitional period										
		mentor plays significant role											
					mid-life transition								
Gould (1978)	leaving parents breaking out	leaving parents staying out	becoming adult marriage work	questioning life's meaning		continuing questioning values; realization that time is finite; often responsible for parents as well as children	occupational die is cast interest in friends, reliance on spouse		mellowing, spouse increasingly important review of contributions				
	reliance on peers												
Sheehy (1976)	pulling up roots	provisional adulthood		age 30 transition	rooting	mid-life transition	restabilization						

Age 15 20 25 30 35 40 45 50 55 60 65 70 75

*Oja, Sharon Nodie. Adult development is implicit in staff development. Journal of Staff Development, 1980, 1, p. 12.

order to form an initial perspective of him/herself as an adult. Levinson calls this "forming a life structure." It is the life structure which continues to be redefined and transformed as the tasks of adulthood are undertaken. As part of this initial life structure, the new adult makes initial commitments to a job and career, gets hired, adjusts to work, quits (or gets fired), deals with unemployment, moves, gets married (or decides not to get married), decides whether to have children, buys a house, and so forth.

No teachers in the 20s time period (see Table 2) showed interest in the ARCS project, neither in the group of 10 teachers finally chosen to participate nor the total group of teachers originally indicating interest in ARCS (50% of the Michigan site staff and 35% of the New Hampshire site staff). This may reflect the current age context of staff in the school sites; both schools are composed of experienced, older staffs and have not had a major turnover of younger teachers. This may also reflect that the ARCS project with its focus on action research did not appeal to those few members on the school staffs who are in their 20s. Burden (1981) indicates that the concerns of 1st year teachers are very different from 2nd, 3rd, and 4th year teachers which are still different from concerns of teachers with 5 or more years of experience. The least experienced teacher originally indicating interest in the ARCS project had 8 total years of experience teaching. Teachers selected for ARCS have 9-23 years of teaching experience. Further description of ARCS teachers according to their stage of career will be discussed in a future section in this paper.

Three teachers in the ARCS project appear to be confronting issues of the Thirties Transition. As an example, consider Jim (age 30), Brooks (age 33), and Lori (age 34). In the late 20s or early 30s the "age 30 transition" confronts the new adult. S/he asks, "What is life all about?" In confronting this question, the adult reexamines the initial life structure and the commitments made in the previous phase. This may result in restablization or change in a career or in personal relationships. The adult may go back to school, get divorced, get married (or remarried), change jobs, or change occupations. Of particular interest is the question of what options exist in the teaching profession for those teachers who wish to make a change.

Table 2

Life Phases of the ARCS Teachers

Life Phase (theorized timeframe)	Men	Women	Total
Getting into the Adult World (early 20s to 27-29)	0	0	0
Thirties Transition (late 20s; early 30s)	Jim (age 30)	Brooks (age 33) Lori (age 34)	3
Settling Down	Elliot (age 34)		1
Becoming One's Own Person (35-39 or 39-42)	Jack (age 38) Ted (age 39)	Anne (age 38)	3
Mid-Life (Forties) Transition (early 40s)		Jane (age 42)	1
Restablization (a three year period around 45)	John (age 41)		1
Transition into the Fifties (late 40s to mid-50s)		Florence (age 45)	1

One teacher in the ARCS project (Elliot, age 34) is dealing with life issues reflective of the phase called Settling Down After the Thirties Transition. Having dealt with issues of the age-30 crisis, the adult settles down in the early 30s, reaffirming commitments and often choosing the career as the most highly valued investment of his/her time and energy. Children are in school; mother (if she was at home) probably returns to work or school. Settling long-term goals both for work-related and family-related activities becomes important to adults in this phase.

Anne (age 38), Jack (age 38), and Ted (age 39) seem to be confronting issues in the next phase of "Becoming One's Own Person." Career-related goals become even more important from ages 35-39 or 39-42 when the adult is concerned with becoming his/her own person. In most professions promotions are crucial markers of success. While work relationships are important, the adult seeks to break away from advisors and mentors in order to become more independent in his/her work. At this age as well as at each of the different ages, the adult is trying to create a better fit between the life structure s/he has defined and the reality of life's challenges. Of particular importance in public education are the concepts of 1) promotions - in what way do they exist in the profession of teaching and 2) mentors - in what ways do mentors and advisors operate in the teaching field?

Jane (age 42) exemplifies the need to create a better fit in her goals as a teacher and in her view of herself as an independent person. The Mid-Life Transition of the Forties occurs as one realizes that life ambitions might not develop. This disparity between the benefits of living within one's stable life structure and the recognition of what else one wants in life urges a person to try to create a better fit between one's life structure and self.

After the Forties Transition, one enjoys again a period of stabilization to enjoy one's choices and life style. John (age 41) reflects the characteristics of this stabilization period. He has the time and energy to become involved in new pursuits (collaborative action research) and at the same time he enjoys being an informal advisor and mentor to less experienced teachers.

The Transition into the Fifties involves another reexamination of the fit between one's life structure and self. There's a sense of a need for redirection; Florence (age 45) says she joined the ARCS team because she needed a "shot in the arm."

Following this short introduction and overview of life phases are three sections describing ARCS teachers' perceptions of: 1) their life phase as chapters in an autobiography, 2) stability and transition in their life phase, and 3) the importance of personal development goals versus career goals in their current life phase. Analysis of the relationship of life phases to each ARCS teacher's reasons for participating in the action research project appears in the 4th section. The report concludes with prelimiary case histories of ARCS participants.

Chapter Headings by Life Phase

In a questionnaire item ARCS participants were asked to think about periods in their lives as chapters in an autobiography and to give a chapter heading to the present period, the period just left, and the next period. Figure 1 presents ARCS teachers' characterizations of their life periods. Many of the responses capture patterns which are suggested by previous research and provide confirmation that people perceive their lives in identifiable periods.

Jim and Brooks, Lori and Elliot describe their present life periods in terms of movement: "Wandering," "Consolidation," "Thirty and Out," or "Moving On." This feeling of change is characteristic of the Thirties Transition. Both Jim and Brooks evidence continuing transition in their perceptions of their next life periods -- "Decisions, Decisions" and "Exploring." Lori and Elliot, however, feel closer to stable periods in their immediate future as they point to "Nirvana" and "Living Comfortably." Both Lori and Elliot evidence characteristics of the Settling Down life phase. As seen in case study descriptions, Elliot seems more settled than Lori and thus has tentatively been placed in the phase of Settling Down after Thirties Transition.

Jack, Ted, and Anne, in contrast to the transition states of the preceding four teachers, describe stable current life periods in their titles: "Happy," "A Stable Life - A Good Teacher," "Future Oriented." This

Figure 1

Chapter Headings by Life Phase

Life Phase/ Age	Period Just Left	Present Period	Next Period
Thirties Transition			
Jim, 30	"Settling"	"Thirty and Wandering"	"Decisions, Decisions..."
Brooks, 33	"Isolation"	"Consolidation"	"Exploration"
Lori, 34	"Discontent"	"Thirty and Out"	"Nirvana"
Settling Down After 30s Transition			
Elliot, 34	"Frustration"	"Moving On"	"Living Comfortably"
Becoming One's Own Person			
Jack, 33	"Transition"	"Happy"	"Growth"
Anne, 38	"Learning and Adjusting"	"A Stable Life- A Good Teacher"	"A Better Life- A Better Teacher"
Ted, 39	"Consolidating Work and Personal Goals"	"Future-Oriented"	"Independent"
Mid-Life (Forties) Transition			
Jane, 42	"Disequilibrium"	"Threshold"	"Autonomy and Harmony"
Restabilization			
John, 41	"Trying to Swim"	"Surviving"	--
Transition to Fifties			
Florence, 45	"Aggravation Unlimited"	"Everything in its Place"	"?"

stability is reflective of the life period entitled Becoming One's Own Person. Titles for their next life periods reflect no great change or upheavals but rather a sense of continuing their current patterns: "Growth," "A Better Life - A Better Teacher," "Independent," again reflective of the life phase described as Becoming One's Own Person.

Jane, in the Mid-Life Transition phase, gives her current and future life periods very similar titles to Ted. She titles her current period "Threshold" and next period "Autonomy and Harmony." More than Ted, however, Jane evidences characteristics of being in transition. The in-depth case descriptions, later in this report, will clarify Jane's transition issues and will raise the question of women's sense of independence occurring as a transition issue in the 40s Transition, while men's independence, like Ted's title, is to be seen as a stable development during the phase of Becoming One's Own Person. Certainly this raises a question as to the legitimacy of the life phase theories for the experience of women.

John and Florence describe restabilization in their current periods titled "Surviving" and "Everything in Its Place." Both give vivid descriptions to their 40s Transition in the life period just left -- "Trying to Swim" and "Aggravation Unlimited." Further data suggests that John is in a more stable current period than Florence, and thus Florence has tentatively placed in the phase entitled Transition to the 50s. (See individual descriptions later in the report.) It is surprising that both John and Florence leave the next life period untitled; John leaves it blank and Florence writes a "?". Is this reflective of society's age-oriented myths, i.e., life is over at 50? What relation does this hesitancy to title the next period have to issues of the teaching profession. Both of these teachers are the most experienced in the ARCS teacher sample, John has been teaching for 19 years and Florence for 23 years. Both are among the most experienced teachers in their schools.

Both the emotions of the life periods and the differences among life periods seem apparent in ARCS teachers' reponses. Although Daniel Levinson suggests the notion that a life structure incorporates both internal and external orientations, ARCS teachers' titles for life periods seem to reflect more the internal in terms of personal meanings than the external in terms of social roles and circumstances. It's also evident that teachers' expectations in general for the next period tend to be positive -- "Nirvana," "Living Comfortably," "A Better Life, A Better Teacher."

Some additional questions about life period titles as related to teaching do need further investigation. Should "Thirty and Out" (Lori, age 34) and "Moving On" (Elliot, age 34) be taken literally? Are these teachers getting out of the teaching profession? Is a goal of "Living Comfortably" reflective of financial needs not satisfied in the teaching profession?

For most ARCS teachers, the period just left has been marked by elements of frustration, discontent, adjustment, and new learning. Are adults' transitions usually marked by such characteristics? Do people looking back see themselves in more transition and disequilibrium than in current or future periods? Has the ARCS project attracted teachers who are currently in or have been in transition more than other teachers? The next section continues this line of questioning as it describes ARCS teachers' perceptions of stability and transition.

Teachers' Perceptions of Stability and Transition

Teachers were asked to indicate whether they currently saw themselves in a period of stability or transition compared with other periods in their life. Table 3 presents these results for the total ARCS group. There is considerable evidence that individuals in the ARCS project perceive themselves to be "in transition." Patterns by life phase suggest the specific pattern of that transition. By self report, 70% (7 out of 10) of ARCS teachers see themselves in a period of transition; this figure changes to 80% when one includes the person who checked "Both." Two (20%) ARCS teachers consider themselves to be in a period of stability.

Table 3

Teachers' Perceptions of Stability and Transition by Life Phase

Life Phase	Stability	Both	Transition
Age Thirty Transition (N=3)			Jim (9 yrs exp) Brooks (9 yrs exp) Lori (12 yrs exp)
Settling Down (N=1)			Elliot (11 yrs exp)
Becoming One's Own Person (N=3)	Anne (10 yrs exp)		Jack (17 yrs exp) Ted (15 yrs exp)
Mid-Life (Forties) Transition (N=1)	professional stability	Jane (16 yrs exp)	personal transition
Restabilization (N=1)	John (19 yrs exp)		
Transition to Fifties (N=1)			Florence (23 yrs exp)
Total	2	1	7
	20%	10%	70%

Further clarification in Table 4 indicates that only 20% of the teachers (2 out of 10) report that their life situation has remained unchanged or stable over the last several years, and one of those two teachers indicated that only her work has remained unchanged or stable (her personal life sphere is on the verge of transition). 50% indicate having just come through a huge transition period, 20% felt they are consolidating a major period of personal or professional change, and 50% believe they are on the verge of making a lot of changes in their lives and work. Interviews with these teachers additionally suggest that they may see the ARCS project as a way to help negotiate these life transitions. See section on Relationship of Life Phases to Reasons for Participating in ARCS.

Combining data from Table 3 and Table 4 results in the additional information from individual teachers. Of the eight teachers who perceived themselves to be in transition according to Table 3, two state in Table 4 that "I feel I'm consolidating a major period of personal and/or professional change" (Ted, age 39 and Florence, 45); one teacher states "I've just come through a huge transition period in my life and work" (Jack, age 38); three more teachers checked the prior statement of having come through a huge transition and added "I feel I'm just on the verge of making a lot of changes in my life and/or work" (Jim, age 30; Brooks, 33; and Lori, 34); while the last two teachers in transition indicate that their transition involves "being on the verge of making a lot of changes" (Elliot, 34; Jane, 42).

Of the two teachers who report in Table 3 to be in a period of Stability, one states, in Table 4, "I've just come through a huge transition" (John, age 41), and one states that "not much has changed for me in the last several years" (Anne, age 38).

It is possible that these questionnaire items pull for change and transition and reflect the investigator's point of view as well as current cultural and environmental emphases on "change." Even the title of our project, "Action Research on Change in Schools" might encourage teachers responding to the questionnaire to consider themselves to be "in transition."

Table 4

Teachers' Description of Current Transition Situation

	1 Not Much Change	2 Just Come Through Huge Transition	3 Consolidating	4 On the Verge of Making Change
Getting Into Adult World (N=0)				
Age Thirty Transition (N=3)	--	Jim Brooks Lori	--	Jim Brooks Lori
Settling Down After 30s Transition (N=1)	--	--	--	Elliot
Becoming One's Own Person (N=3)	Anne	Jack	Ted	--
Mid-Life Transition (N=1)	Jane (in work sphere)	--	--	Jane (in personal sphere)
Restabilization (N=1)	--	John	--	--
Transition Into the 50s (N=1)	--	--	Florence	--
Total (N=10)	2 (20%)	5 (50%)	2 (20%)	5 (50%)

Multiple responses were given by some participants. Thus totals exceed 100%.

However, when one investigates the school organizational context variables in the two sites, one recognizes that the two schools have been in a period of major change and transition over the last 4-5 years. One became a middle school in 1975, and the other changed to a school-within-a-school organizational structure in 1976. These organizational changes plus recent decreasing enrollments, teacher riffing, new principals, and increased financial pressure on both schools from parents and school boards would verify the current school environmental emphasis on "transition." From the wording of the question, it is difficult to determine whether the period of transition results more from this work environment or the personal dimensions of the teachers' lives. Only in later questions does this question on transition vs. stability seem to be clarified for individual teachers.

When in a transitional period, do teachers become involved in staff development projects? Are staff development projects more useful in a period of relative stability or in a transitional period? When does involvement in staff development activities yield the most satisfaction in the achievement of personal goals? professional goals?

Does the length of years of ARCS teachers on-the-job experience affect the element of transition? Examining the life phase categories in Table 3 for transition and stability compared with ARCS teachers differing amounts of teaching experience we find little connection. Four of the five teachers with less than 15 years of teaching experience indicate they are in a period of transition. Four of the five ARCS teachers with more than 15 years of experience indicate they are also in a period of transition. However, in examining further the categories for transition and stability in Table 4 for teachers at different points in their careers, ARCS teachers in the Thirties Transition (with 9, 9, and 12 years of teaching experience) seem to experience themselves in greater relative transition in their careers than do teachers at later life phases with more years of teaching experience (to be exact, 15, 16, 17, 19 and 23 years of teaching experience). Research by Burden (1981) indicates differences between teachers with 1, 2, 3, 4 and over 5 years of teaching experience. This does not help us investigate teachers with 9 years or more of experience, as are the ARCS teachers.

The pattern of participation in ARCS by sex, however, suggests an hypothesis that greater numbers of women may enroll in an activity like collaborative action research during transitional periods while men tend to enroll during periods of relative stability. Of five women in the ARCS project, four seem to be in life periods of transition: Brooks and Lori in the Thirties Transition, Jane in the 40s Transition, and Florence in the 50s Transition (refer to Table 2). Of the five male ARCS teachers, only one is in a life phase involving major transition; Jim is in the Thirties Transition. The rest of ARCS male teachers are in more stable life periods. Lortie (1975) suggests a sex difference in teachers' careers when pointing to men often having additional jobs beyond teaching and thus being limited in their time commitment to teaching more than women. We will investigate this element of time availability further in the in-depth description of each teacher's reasons for participating in the collaborative action research team.

Importance of Personal versus Career Goals

Table 5 summarizes by age teachers' responses to the question asking which is more important at this point in your life -- personal development goals? work and career goals? or both? Distribution of those teachers not selected for the ARCS project was very similar to the pattern of ARCS teachers' responses found in Table 5.

Brooks, Lori, and Jim, all in the Thirties Transition, and so similar in many characteristics of the transitional life phase, perceive their life goals quite differently on this question. Lori indicates work and personal goals to be equally important, while Brooks and Jim are at opposites. For Brooks, personal development goals are slightly more important; and for Jim work and career goals are slightly more important.

Table 5

Which is More Important at this Point in Your Life?

			1	2	3	4	5
			Personal Development Goals		Both Work and Personal Goals		Work and Career Goals
Age Thirty Transition	N=2	F		Brooks	Lori		
	N=1	M				Jim	
Settling Down		F					
	N=1	M					Elliot
Becoming One's Own Person	N=1	F			Anne		
	N=2	M			Jack Ted		
Mid-Life (Forties) Transition	N=1	F			Jane		
		M					
Restabilization		F					
	N=1	M				John	
Transition to the Fifties	N=1	F				Florence	
		M					

Elliot, in the Settling Down Life Phase, is the only teacher to stress work and career goals as most important at this point in his life.

Anne, Jack, and Ted, all in the more stable life phase of Becoming One's Own Person, indicate work and personal goals to be equally important, as does Jane in the Forties Transition.

It's interesting to remember that although Jane responds here that both career and personal goals are equally important to her now, she has described herself in a period of professional stability, while also in a period of personal transition. Thus, the Forties Transition reflected in her personal life does not necessarily negate importance of her work goals. We compare this to Brooks in the 30s Transition who is the only ARCS teacher to indicate personal development goals more important than work goals at this time.

John, in the Restabilization Phase and Florence, in the Fifties Transition, both indicate work goals slightly more important than personal goals.

Relationship of Life Phases to Reasons for Participating in ARCS

Why do teachers at different life phases choose to participate in a staff development effort like the ARCS project? In our original questionnaire and interviews we attempted to investigate ARCS teachers' reasons for participating. Table 6 summarizes teachers' reasons for participating according to the teacher's life age/cycle phase. Career stage is indicated in parentheses after each statement.

Table 6

Summary of Teachers' Reasons for Participating in ARCS

Age Thirty Transition

Jim (age 30, 9 years of teaching experience, 8 at current school) Sort out feelings about change and a possible shift into administration; might help him make better decisions

Lori (age 34, 12 years of experience, 11 at current school) Interested in innovations; liked the approach; might be interested in getting Ph.D.; determined not to fall into a rut

Brooks (age 33, 9 years of experience, 6 at current school) As aid in coping with changes to put some things together in her life; would look great on a resume; thinking about leaving teaching

Settling Down/Becoming One's Own Person

Elliot (age 34, 11 years of experience, 5 at current school) Has enjoyed participating in such activities before; wants greater precision in conceptualization of issues; may be changing jobs to greater responsibility

Becoming One's Own Person

Jack (age 38, 17 years of experience, all at current school) Time available; interested in getting ideas from others; find out more what's happening in the school from others

Anne (age 38, 10 years of experience, all at current school) Interested in changing

Ted (age 39, 15 years of experience, 3 at current school) Has time; interested in issues; wants to focus on something all will have deep caring about

Mid-Life Transition

Jane (age 42, 16 years of experience, 6 at current school) Interested in changes in own teaching; extend her success to more areas; concerned she is losing sight of kids from the pressure to change from an elementary 6th grade teacher to a middle school 6th grade teacher to a junior high 6th grade teacher

Restabilization

John (age 41, 16 years of experience, 6 at current school) Has time and is interested in school problems; wants to find out more about educational research; use group as a sounding board

Transition to 50s

Florence (age 45, 23 years of experience, all at present school) Wants to change her own methods; needs shot in arm; to relieve monotony; chance to find out "that I'm really doing things the right way"

Three teachers' reasons seem characteristic of the life phase entitled "Age Thirty Transition." All are considering changing jobs; Lori and Jim are thinking about shifts into administration and Brooks is thinking about leaving teaching.

Although Elliot speaks of changing to a job with greater responsibility (perhaps outside teaching), there is the impression of his Settling Down, of his having made some decisions and thus participating in ARCS more from an interest in such activities before. He is in a period of more stability compared to the transition of the 30s reflected in the comments of the previous three teachers.

Jack, Anne, and Ted, in the phase entitled Becoming One's Own Person, seem to be participating in ARCS from a position of relative stability in their careers and personal lives. They have time to do so (as does John who is in a later stable life phase, Restabilization after 40s Transition) and they are interested in hearing what other teachers have to say and in joining a group of teachers working on a common theme.

Jane and Florence, however, seem more interested in changes in their teaching. Both are in transition, Jane, the Mid-Life 40s Transition and Florence, the Transition to the Fifties.

Preliminary analysis of the relationship of life phases to reasons for participating in ARCS is presented in each of the ten in-depth descriptions which follow. Figure 2 helps to illustrate issues which ARCS teachers perceive as very important in their current life phases.

Figure 2 summarizes ARCS teachers' responses to thirteen questions in the Educational Experiences Inventory. The thirteen questions/issues were randomly distributed in the questionnaire but have been put in a sequential order in Figure 2 according to the critical issues hypothesized at various phases across the life span. For each question, teachers responded on a five point scale as to whether the issue was: 5) very important - a key issue now; 4) becoming increasingly important; 3) somewhat important; 2) just beginning to be important; or 1) not an issue now. Respondents were given space on each question to add written comments if they wished. Data from teachers' "key issues now" (rated 5) and "increasingly important" issues (rated 4) are listed in Figure 2 and are discussed further in the case descriptions.

Figure 2

CRITICAL ISSUES BY LIFE PHASE	1 Separating myself from my family and/or my parents' expectations	2 Seeing myself as an adult becoming part of the adult world	3 Starting a career and/or exploring family or community roles	4 Parenting . . . raising my children as I'd like to (or deciding to be a parent)	5 Developing my sense of myself as an adult	6 Making deeper investments in my choices for life and work; setting long range goals and meeting them	7 Becoming recognized for my contribution and achievement in roles I value	8 Becoming my own person with identity and direction, not dependent on boss, spouse, colleagues, critics, or mentors	9 Changing my activities and ambitions to reflect more realistically who I am and what I want from my life and work	10 Sharing my knowledge and skills, contributing to the next generation, being helpful to younger friends and associates	11 Sharing everyday basic joys with others; maintaining warm relationships with friends, family, spouse and colleagues	12 Accomplishing a few important things in the finite period I have left	13 Accepting what has transpired in my life as "mine"; valuing myself and my choices
ETTING INTO ADULT ORLD													
THIRTIES TRANSITION													
Jim (30)			4		4	5		4			4	4	4
Brooks (33)			4*	4		4*	5*		5	5	5*	4*	5
Lori (34)			4*	4		5			5		5*	5	4
ETTLING DOWN													
Elliot (34)			5	5			5						
ECOMING ONE'S OWN ERSON													
Jack (38)						4				5	4	4	
Anne (38)						4		4		4	4		4
Ted (39)				5	4	4	4			5	5	5	
IDLIFE (FORTIES) RANSITION													
Jane (42)	4	4					5*	5*			4*		
ESTABILIZATION													
John (41)				4						5*	4		
RANSITION TO 50S													
Florence (45)						4	4	4	4	5	5	4	5

Key:
5 = very important - a key issue now
4 = becoming increasingly important
3 = somewhat important
2 = just beginning to be important
1 = not an issue now
*respondent added written comments

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Does knowledge of life phase help one to understand the reasons individual teachers have for wanting to participate in a collaborative action research project? What developmental tasks and critical issues at different life phases trigger teachers' desires for joining the ARCS project?

Although this report focuses on life phase and life age/cycle issues, later reports will describe teachers' developmental stage characteristics as well. Thus, as each teacher is introduced in this final section of the report, the teacher's developmental stage is noted at the far righthand side, with age on the lefthand side and life phase title in the middle of the heading.

Case Histories of ARCS Participants

JIM (age 30) (Self-Aware Level)
Thirties Transition

In the late 20s or early 30s the "age 30 crisis" confronts the new adult. S/he asks "What is life all about?" This questioning may result in a change in career or personal relationships.

Jim wants to sort out his feelings about change and he is thinking about a possible shift into administration. He thinks that participation in ARCS might help him make better decisions.

For Jim, school has changed. "I would like to look more closely at those items that cause change. I believe that the major and significant changes in educatin must be made by teachers if they are going to be longlasting and pertinent."

In deciding on a possible shift into administration, Jim suggests that participation in ARCS may "help sort out some of the feelings about teaching/etc."

> Benefits for self? "I just hope it would make me a better person to make decisions . . . in turn, if I'm able to make better decisions not only about my own class but make them about the school, then what influence I can have here . . ."

Jim values work and career goals over personal goals at this time in his life. He feels he has just come through a huge transition period and is on the verge of making a lot of changes. "Thirty and Wandering" is the chapter heading he gives to his current life period with "Decisions, Decisions" the name for his next period. There is a strong indication that Jim wants to take control and make these decisions -- he feels strongly that teachers have to be involved if changes are to work.

He perceives himself to be most hard at work on the life issue of making deeper investments in choices and setting long range goals and meeting them. Further indications of Jim's transition period are that he sees many (six) additional life issues as becoming increasingly important to him: starting a new career, developing his sense of himself as an adult, becoming his own person, sharing everyday human joys with others, accomplishing important things, and accepting what has transpired in his life as his. (See Figure 2.) The 30s Transition often includes attention to a broad range of issues rather than a narrowing down which we see in the 40s and 50s Transitions.

LORI (age 34) (Self-Aware Level)
Thirties Transition

What options do exist in the teaching profession for those teachers in the 30s Transition who wish to make a change?

Lori has twelve years of teaching experience, eleven of them at the school in which she currently teaches.

> I'm always interested in hearing about innovations in education which will make me a more effective teacher . . . determined not to fall into the rut of an experienced teacher whose most important teaching tool is the file cabinet.

Like Jim and Brooks, in the Thirties Transition, Lori indicates that she has just come through a huge transition in her life and work, and she feels she is on the verge of making a lot of changes. In describing the transition, she has just experienced, she suggests what it means to readjust to the status quo of the classroom.

> I recently completed an M.A. in Educational Leadership, and I was looking forward to a

> new position in the district. Unfortunately, I applied for 3 positions in the district and was turned down for all 3. Overcoming these losses was very difficult for me. Now that I'm over them, I'm adjusted to reassuming my role as a respected classroom teacher. However, if the situation arises I will apply for a position outside the classroom, but only if its what I REALLY want, not for the sake of moving out of the classroom.

Her participation in ARCS seems motivated by her interest in innovations and because she liked the approach of teachers doing action research. Benefits for herself include the possibility of getting a Ph.D.

> I was very interested in what you were going to offer and I have to agree wholeheartedly with this new approach. Let's look at what teachers say are their own problems instead of going into the classroom after a while and saying here is your problem, now how are you going to take care of it?

> Benefit for self? "I would really like a doctorate someday and I have been thinking about it in terms of what would I ever write a thesis on and, you know, when you brought this up, boy, there would sure be some interesting topics to explore."

Unlike Jim, Lori lists work and personal goals as equally important in her life. This is reflected in the choice of 4 key issues she is most hard at work on. (See Figure 2.) She chose the same key issue as Jim, making deeper investments in life and work choices and setting long range goals and meeting them. A second key issue reflects her balance of work with more personal goals: sharing everyday human joys with others and maintaining warm relationships with friends, family, spouse and colleagues.

Research with life phases suggests that women in their 20s focus more on personal issues than men of their same age while women in their 30s begin to focus on work choices more. Lori's third issue is accomplishing a few important things in the finite period she has left. It is unlikely that this issue reflects her growing sense of the finiteness of time which Neugarten (1976) suggests confronts adults at mid-life but rather that Lori feels the pressure of a career change and the need to take action before too long, a more typical Thirties Transition issue. This latter reason seems more likely when listening to Lori's 4th key issue in life right now, changing her activities to reflect more realistically who she is and what she wants from her life and work. Lori titles the period of life she just left as "Discontent," her present period as "Thirty and Out" and the next period as "Nirvana."

Another indication of Lori's Thirties Transition, with many issues up in the air, is that she is not just working on these five key issues but sees 3 additional issues as becoming increasingly important: parenting (deciding whether to be a parent), exploring a new position, and accepting what has transpired in her life as "hers."

BROOKS (age 33) (Conscientious Stage)
Thirties Transition

In confronting the Age 30 crisis the adult reexamines the initial life structure and the commitments made in the previous phase of the 20s.

Brooks is a reading teacher with 9 years of experience, 6 at her current school, whose reasons for participating in ARCS most clearly describe her use of ARCS as an aid in coping with the changes she sees in the school and with the personal issues she is confronting in her life and teaching.

> School has changed. "I, personally, am trying to discover the effects that these changes have on me . . . (talking about finding another job) . . . I just don't seem to be able to cope with all these changes."

> In early journal entries Brooks writes that she wants "to put some things together in my life. . ." She's concerned over dealing with problems in the school and thinking about leaving teaching. "I said I better really deal with this issue now. So I came back to school resolved that I better deal with what I've got here, before I even try to look for . . . if I want to go on. Another thing, I just thought it would look great on a resume. I just mentally like to keep active, I guess."

> 10/21 "I want to understand why I'm unhappy about the 'system' and the institution of teach-

> ing. I felt that keeping a journal would help. I needed some motivating reason to get me to write. As an undergraduate in college I had visions of becoming a researcher in psychology. I really enjoy researching. It's like solving a puzzle."

Like Jim and Lori she indicates she has just come through a huge transition and is on the verge of making a lot of changes in her life and/or work. She clearly recognizes that finding another job and leaving teaching is not the only answer.

> Finding another job at this time would only be fueling my idealism. I really like my colleagues (very few that I don't like), I enjoy the junior high age group, and I am a talented teacher. So why do I want to leave teaching? I find most of my problems are with administrators and administrative methods. I feel so helpless and frustrated that their power is effecting my personal life.

Brooks' state of transition is apparent by her mention of being hard at work on five key issues with 4 additional issues becoming increasingly important to her. Like Lori, she lists two of those key issues to be sharing everyday human joys with others (says, "Every day I work at this -- I'm aware of its importance") and changing my activities and ambitions to reflect more realistically who I am and what I want from my life and work. Brooks also keys in on the issue of being recognized for her contribution and achievement in roles she values and adds "this is the crux of the problem at school." Brooks, Lori, and Jim all seem to be involved in ARCS for conscious reasons of personal growth amidst this transition time of the 30s.

Brooks' two additional key issues are valuing herself and her choices and contributing to the next generation -- "I have developed two friendships this past year with a 6 year old and a 12 year old." Brooks is the only one of ten ARCS teachers who values personal development goals slightly over work and career goals at this time in her life. Having been very satistifed with, and rated herself as very successful in previous staff development programs, she notes that since the Teacher Corps project three years ago the Junior High "has gone through one change right after another. I, personally, am trying to discover the effects that these changes have on me." She titles her current life period as one of "Consolidation." The period she just left she titled "Isolation" and she looks forward to a next period of "Exploration."

ELLIOT (age 34) (Individualistic Level)

Settling Down

Having dealt with the issues of the age 30 crisis, the male adult settles down in the early 30s, reaffirming commitments and often choosing the career as the most highly valued investment of his time and energy.

Elliot, a math teacher of 11 years, 6 of them at his current school, was originally somewhat hesitant to commit to the two year ARCS project because he was preparing "to advance to a role of more responsibility" most likely outside the teaching field.

> Very recently I have questioned my motivation in meeting weekly and discussing educational topics; I'm a little burned out from that as a result of my pursuing the Masters degree in Education I did recently. I'm considering moving out of Education. I wouldn't want to sit on a committee, sit on this team rather, and be only halfway involved and have one part of me saying what am I doing here?

In deciding to participate he indicates a clear sense of commitment -- a conscious decision.

> ARCS will ideally motivate thought and greater precision in my conceptualization of issues relevant in (an) advanced position.

Elliot also indicates an awareness of his own skills as he adds:

> I derive pleasure from such activities (action research); I am skillful . . .; I can make significant contributions.

Although only moderately satisfied with previous staff development activities, he has "enjoyed participating in (research-type) activities . . . . during the Teacher Corps project we had here. I signed up (for ARCS) and was interested and excited about it.

Elliot does indicate that prior staff development activities have been somewhat helpful to him in negotiating changes in his life or work in terms of "motivation to learn and filling voids in knowledge background."

Elliot feels he is just on the verge of making a lot of changes. The life period he just left he titled

"Frustration." The present period is titled "Moving On" and the next period he sees as "Living Comfortably." When asked to indicate how hard at work he is on certain life issues he circled three key issues and indicated the rest (out of 13 listed in Figure 2) were "not an issue now." This rating is very different from Jim, Lori, and Brooks in the Thirties Transition. There is a sense that Elliot has wrestled with and made decisions on a number of life dilemmas and is on his way in the life period titled "Settling Down/Becoming One's Own Person." Elliot's three key issues are parenting, starting a career and/or exploring family and community roles, and being recognized for his contribution and achievement in roles he values.

Of all ten ARCS teachers, only Elliot indicates work and career goals as significantly more important than personal goals. "My personal life right now is substantially involved in planning and preparing for professional growth/change." (Refer back to Table 5.)

ANNE (age 38) (Self-Aware Level)

Becoming One's Own Person

Career related goals are important to Anne in the stable life phase of Becoming One's Own Person.

Anne perceives herself to be in a period of stability, as she says that "although job security becomes a worry each year, my job and life have not changed much in the past few years." She has 10 years of teaching experience, all at the same middle school. She titles the life period she just left "Learning and Adjusting" and her present period "A Stable Life - A Good Teacher." The phase of Settling Down and Becoming Her Own Person certainly fits her perceptions. Anne is hard at work on no major life issue in Figure 2. She suggests that modifications are needed as she looks ahead to her next life period: "A Better Life - A Better Teacher." A need for change has evidently influenced her reasons for participating in ARCS.

> I see the ARCS project as an excellent means of incorporating new or 'changing' methods into my classroom. The community and school are in constant change. I seem to be at a stage in life and teaching when change is necessary and needs to be initiated by some outside force . . .

Work and personal goals are equally important to Anne.

> Major issues in my career seem to be to bring all my materials and know-how up to date and together. I would like to improve my techniques and become a better teacher . . . My personal life seems very stable. My husband has worked very hard to earn his degree and improve himself. My children are in high school and seem very independent.
>
> Purpose of project? "I see it as twofold: getting people in touch with change that's going on and I also see it as a way of me working at some problem that I might want to attack this year. And really doing something to that problem and what I identify as something that needs work in my classroom, working with children, educating them."
>
> Benefits for self? "I think it's a really good way for me to realize some sort of improvement or growth and hopefully learn from others and share with them."

Anne's ability to face change within her own stability is different from the feeling of transition in Lori's and Jim's life phase descriptions in the 30s Transition. This suggests that teachers in relatively stable life age/cycles will approach the ARCS project differently from teachers in transitional life periods.

JACK (age 38) (Conventional Stage)

Becoming One's Own Person

Career related goals become even more important from ages 35-39 or 39-42 when the adult is concerned with Becoming His/Her Own Person. The adult is again trying to create a better fit between the life structure he/she has defined and the reality of life's challenges.

Jack is a math teacher with 17 years of teaching experience. He has also held a part-time administrative level job as House Coordinator at the Junior High for 6 years since the Junior High changed to a school-within-a-school concept. Jack indicates he has just come through a period of "Transition" in his life and work and is now in a period he titles "Happy." Jack's key issue in life right now is sharing knowledge and skills, contributing to the next generation, being helpful to younger friends and associates. Work and personal goals are equally important.

Jack's reason for participating in ARCS is because "it sounds like an interesting challenge. I could do it now because my outside school commitments are fewer." He is also interested in getting ideas from others and sees that as a benefit of his participation.

> I'm in hopes the purpose . . . is to look at some of the problems that maybe are unique to this school but also affect junior high education throughout the country . . . Well, just participating and sitting and talking with other people, getting other ideas, there have to be benefits you know, to yourself. Even if they are accidental there have to be benefits. It's easy for me to sit there as a house coordinator and also as a teacher and not see some of the other problems that have gone on in the school. I think it's great to get a cross section and of the six people interested right now, we have a cross section somewhat (of teachers in the school).

One other indication of Jack's stability in the phase of Settling Down/Becoming One's Own Person is the feeling of being more independent in his work, not relying on the old advisors but becoming open and aware of other opinions in the school.

Although only moderately satisfied and rating himself as moderately successful in prior staff development activities, he states, "I have not taken too many past (staff development) activities too seriously. I have taken them to satisfy recertification requirements. It is now time to do something constructive." Jack titles his next life period as "Growth" and sees three life issues as becoming increasingly important: accomplishing a few important things in the finite period left, making deeper investments in choices, and sharing everyday human joys with others. A definite sense of a career stage expansion is visible in Jack's choice to focus on meaningful activities in the workplace of the school now that other major life decisions are made.

TED (age 39) (Self-Aware Level)

Becoming One's Own Person

Ted is also in the phase of Becoming One's Own Person. Ted, like Jack, indicates that "I have the time and desire to participate in a research project." He has fifteen years of teaching experience, some including a principalship, and he has been teaching at the Junior High for three years.

At this point in his life Ted feels he is consolidating a major period of work and/or professional change; he titles the life period he just left "Consolidating Work and Personal Goals." His current life period is titled "Future-Oriented."

Work and personal goals are equally important. Key issues he is hard at work on are parenting and sharing everyday human joys with others, sharing knowledge, contributing to the next generation, and accomplishing a few important things in the period of life left. Some of these 4 key issues are reflected in Ted's description of his expectations for ARCS.

> . . . I think the purpose is . . . that we're going to focus on something that all of us have a deep caring for or we're going to analyze a problem and maybe reach some kind of conclusion about it . . . something that will make you understand it better and make you a better teacher, maybe a better person and will meet at least some of the needs of the people.

> Ted wants a "clearer focus and understanding of issues" such as: "classroom management, personal growth (kids and teachers), importance of subject matter (what we teach), lack of time and effort spent in developing character in pupils."

Also, like Jack, Ted speaks of goals for the project in terms of hope for school improvement without much mention of personal goals for improvement nor self-growth. An indication that Ted may be approaching a time of transition, the 40s Transition, is that in Figure 2 he notes three additional issues are becoming increasingly important to the four other issues which are key in his life right now. The breadth in issues is quite different from both Jack and Anne who seem to be more stable than Ted in the life phase of Becoming One's Own Person.

JANE (age 42) (Individualistic Level)

Mid-Life (Forties) Transition

The Mid-Life Transition is a time of redefining one's work in conjunction with a deeper understanding of self. Jane, age 42, with 16 years of teaching experience (6 at the middle school), indicates this sense of redefinition as she gives the following reasons for participating in ARCS.

> I think this program can make a difference . . . Also, I want to change. In the past, I have always liked to try new things, but in the last 3 or 4 years, I think I've slacked off on innovation and become a bit complacent. I want to do something new. I've gotten some systems down pat and working well, I'd like to extend 'down pat and working well' to other areas.

A key issue for Jane is being recognized for her contributions and achievement in roles she values. She says, "I want to be the best teacher there is. I'm pretty good already." Like Anne, Jane looks for change within a stable sense of herself, her abilities, and her accomplishments. As part of her redefinition of the teacher role, Jane is concerned that "I'm afraid, as I've changed from being a 6th grade elementary teacher, to a 6th grade middle school teacher, to a 6th grade junior high teacher that I am losing sight of the kids because time and production have become so important."

Jane's second key issue at this point in her life is becoming her own person with identity and direction not dependent on boss, spouse, colleagues, critics or mentors. For instance, in relating issues in her personal life to participation in ARCS she says:

> All my married life, I've been a docile unadventurous person, and I think it's time I started being more independent. This is probably irrelevant, but the meeting with the New Hampshire teachers would be a breakthrough in that I'd be away from home alone for the first time.

This sense of exloring one's identity apart from family and work is a common theme at the Forties Transition. Changes in self-perception are typical. Change is both internal and external in Jane's statement above. She wants renewal in her work and is reexamining her roles as wife, mother from a new perspective on herself. Seeing herself as an adult is thus a key issue that is gaining importance. She says, "I've been dependent too long." The sense of having accomplished the life tasks in the 30s called Becoming One's Own Person comes through over and over in her professional work. She titles the period she just left as "Threshold." Like many women in the Forties Transition she is now concentrating on issues of independence. She titles her current period "Disequilibrium" and looks forward to a next period of "Autonomy and Harmony."

In Jane's response there is also an urgent quality of most transitions as compared to more stable times. The Forties Transition is often seen as the internal clock shifting from time lived to time left to live. Urgency is expressed by many at this transition. In Jane, however, the professional side is quite stable, "I feel I have accomplished important things and expect to continue. I feel no pressure or panic about the finiteness of it all."

Although Jane notes that professsinally she is in a period of stability, while personally she is in a period of transition, she seems to be on the verge of making changes in both personal life and work. One will undoubtedly affect the other.

JOHN (age 41) (Conscientious Stage)

Restabilization After 40s Transition

After the 40s Transition, one again enjoys a period of restabilization to enjoy one's choices and life style.

John has been teaching science at the Junior High for 11 years and has 19 total years of teaching experience. He was chairperson of the staff development program for the Junior High School and, in fact, was part of the team that designed the current district-wide staff development plan, having to appear personally before 5 town school boards to negotiate approval. Because of the experience, he says, "I can deal with administation and school boards better than before." He is one of two ARCS teachers to note that he is in a period of stability; evidently this is important to his reasons for participating in ARCS. He has come through a transition initiated by a divorce and has had total responsibility for raising his junior high aged son for the last few years. There is a sense that in the current period of stability, John can combine study of action research (ARCS) with his family responsibilities and enjoy both.

> I enjoy teaching junior high students. I have taught in public and private, small and large schools (and have seen many changes good and bad), and have many ideas of how to improve. In the past my personal life has been hectic so extra time could not be used. Now I have the time.

In John, like Jane, there is a sense of timing and of being able to look backward and forward in reflecting on oneself.

John's main issue in life right now seems to be mentoring. Very important to him is sharing his knowledge and skills, contributing to the next generation of teachers, and being helpful to younger friends and associates. Important in his career he says is "what is good for students." He sees the ARCS group as a potential sounding board for his ideas.

> Benefits? "For me, yes, because in dealing with people you're working with, if you're talking with them on a basis in which you are constantly sharing ideas it can't help but help either you or them; even if you may not agree with the idea, if they have a sounding board, if it helps them, it helps you.

In regards to this interview question at the beginning of the project, we note that on a regular weekly basis through the year, John has shared his ARCS log comments with the principal and at least 25% of the Junior High staff.

One more aspect of the stabilization after either the Thirties or Forties Transition is a response which indicates pursuing long term goals and accelerating progress or satisfying intellectual curiosity and exploring personal interests. John illustrates this latter facet of stabilization when he says that he's not done much with educational research and "that's part of the reason why I'm getting involved now to find out more about it . . . and to maybe be involved with it." John titles the life period he just left "Trying to Swim" and the current period "Surviving."

FLORENCE (age 45) (Conscientious Stage)

Fifties Transition

The transition into the 50s involves another reexamination of the fit between one's life structure and oneself and often results in a need for redirection.

Florence has taught all of her 23 years at the same middle school. She is single and has no family in Michigan. "My friends are my family," she says. The title she gives to her current life period is "Everything in Its Place" and the period she just left she titles "Aggravation Unlimited." Although she indicates her current period to be more stable, her reasons for participating indicate a need for change.

> I would like to explore some new approaches to presentation of language to students at this level (7th and 8th grades) . . . I know there are probably ways that I can be more effective, and I'd like to explore those possibilities. It is important to do this now to alleviate a feeling of monotony I am experiencing.

Comments like this, in periods of relative stability, make one wonder whether, in fact, human life is based on change and those periods of stability are only stopping places in a cycle of transitions. Florence adds, "I wanted to find out if there are some ways to institute changes in my methods and still be as effective a teacher as I think I am now." Like Jane, there is the need for change but a kind of change that retains one's effectiveness. Also, we note Florence's clear sense of her own capabilities not mentioned by Jim or Lori, who are in the 30s Transition and still discovering and testing their skills.

For Florence, like Jane in the Mid-Life Forties Transition, the ARCS program may be providing a setting for redefining one's work in conjunction with a deeper understanding of self. Florence, more than Jane, is seeking professional autonomy. Florence has for the last eight years been resident manager of the apartment she had lived in for 20 years. Obviously, this involved extensive duties and responsibilities. In her teaching, however, there is a need to, she says, "find out for myself that I'm really doing things the right way, you know."

Her concern with meaningful teaching decisions and her part in making those decisions is also reflected in her comments about the purpose of ARCS as she sees it. The project appealed to her because it recognized the capabilities she knows she has.

> ARCS sounded interesting when my principal mentioned it at staff meeting. I was especially interested when she said that this research would not be the usual educator-decides-changes type with the teacher-expected-to-institute it.
>
> I think it's so attractive to me . . . It seems that finally somebody is, instead of saying here-is-a-problem-we-want-you-to-prove-this-is-a-problem, is saying to me what do you see are the problems in your classroom situation? And what can we do about it, you know, what can you tell us about this problem and how can we work on it so it's no longer a problem?

Florence's key issues in life right now are sharing knowledge and skills with others, sharing everyday joys with others, and accepting what has transpired in life as hers, valuing herself and her choices. Indications of transition amidst stability are that Florence notes 5 additional life issues are becoming increasingly important as well.

Summary

This preliminary report has described ARCS teachers' life age/cycle characteristics in relation to their reasons for participating in a collaborative action research project. The data have suggested themes and issues in the teaching profession and individual dimensions of teachers' lives, in relation to the process of collaborative action research. The themes will continue to be investigated through the life of the project.

Earlier reports of key activities and events of the first year of the project are available from Sharon Nodie Oja at the ARCS project office, Morrill Hall, University of New Hampshire, Durham, New Hampshire 03824.

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Appendix A

EDUCATIONAL EXPERIENCES INVENTORY
FOR ACTION RESEARCH ON CHANGE IN SCHOOLS PROJECT

Directions: Some questions are pre-structured and call for just a check mark or circle in answer. Other questions are open-ended; please use extra space if it's needed.

1. Your age (please) ______ 2. Sex ______ 3. School ______________________

4. Subject you teach ______________ 5. Grade of students you teach 6th ______

7th ______ 8th ______ 9th ______

6. How many years of experience do you have teaching at the junior high? ___ In all? ___

7. What is the level of your previous education? B.A./B.S. ____; B.A. + 15 ____;

B.A. + 30 ____; M.A./M.S. ____; M.A. + 15 ____; M.A. + 30 ____; M.A. + 45 ____;

Other ______________________

8. How satisfied are you with your experience in inservice or staff development? (How well does it meet your needs, help you achieve your goals, etc.? Please circle one number on the scale below.)

very 5 satisfied	4	3 moderately satisfied	2	1 not very satisfied

9. How would you rate your success as a participant in prior staff development programs? (Please circle one number below.)

very 5 successful	4	3 moderately successful	2	1 not very successful

10. Why are you interested in the Action Research on Change in Schools Project? (Please answer this question as fully as you can. Why, for example, is it important to do this now as opposed to some other time in your life?)

11. Was there a critical incident or realization that led you to decide to participate in the ARCS program? (If so, please describe.)

12. What are the major issues in your work or career right now? What do you want from your experience in the ARCS in relation to these issues? (Please answer this question as fully as you can.)

13. What are the major issues in your personal life right now? How do these issues relate to your participation or experiences in ARCS? (Please answer this, too, as fully as you can.)

14. Which is more important at this point in your life? (Please circle one number below.)

my 5 work and career goals	4	both 3 work goals and personal goals are equally important	2	1 my personal development goals

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15. Compared with other periods in your life, do you feel that you are now in a period of stability or transition in your life and work?

____ I'm in a period of stability ____ I'm in a period of transition

16. Please check below the statement that most nearly describes your situation at this point in your life. (If more than one statement applies, put a 1 by the statement that is most accurate, and put a 2 by the other relevant statement.)

____ Not much has changed for me in the last several years; I'm in a stable situation with respect to my life and work.

____ I've just come through a huge transition period in my life and work.

____ I feel I'm consolidating a major period of personal and/or professional change.

____ I feel I'm just on the verge of making a lot of changes in my life and/or work.

____ Other: ____________________

____

17. Please circle one number for each statement below to indicate how "hard at work" you are on each of the following issues at this point in your life. Space is provided for comments to expand or qualify your answer.

a) Separating myself from my family and/or my parents' expectations

very 5 important- a key issue now	4 becoming increasingly important	3 somewhat important	2 just beginning to be important	1 not an issue now

Comment: ____________________

____

b) Parenting...raising my children as I'd like to (or deciding to be a parent)

5 4 3 2 1

Comment: ____________________

____

c) Starting a career and/or exploring family or community roles

5 4 3 2 1

Comment: ____________________

____

d) Being recognized for my contribution and achievement in roles I value

5 4 3 2 1

Comment: ____________________

____

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e) Accomplishing a few important things in the finite period I have left

5 4 3 2 1

Comment:

f) Seeing myself as an adult, becoming part of the adult world

5 4 3 2 1

Comment:

g) Making deeper investments in my choices for life and work;
setting long range goals and meeting them

5 4 3 2 1

Comment:

h) Sharing my knowledge and skills, contributing to the next generation,
being helpful to younger friends and associates

5 4 3 2 1

Comment:

i) Becoming my own person with identity and direction, not dependent on boss,
spouse, colleagues, critics or mentors

5 4 3 2 1

Comment:

j) Sharing everyday human joys with others; maintaining warm relationships
with friends, family, my spouse, and colleagues

5 4 3 2 1

Comment:

k) Accepting what has transpired in my life as "mine," valuing myself and
my choices

5 4 3 2 1

Comment:

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l) Developing my sense of myself as an adult

5 4 3 2 1

Comment: ____________________

____

m) Changing my activities and ambitions to reflect more realistically who I am and what I want from my life and work

5 4 3 2 1

Comment: ____________________

____

18. Thinking about periods of your life as chapters in your autobiography, please give a chapter heading to the present period of your life.

____

How about a title for the period you just left? ____________________

____

What's your guess for a chapter heading for the next period of your life?

____

19. Has being a participant in prior staff development activities helped you make any changes in your life, or negotiate any transitions in your life or work? (Please circle the appropriate number below.)

no, 5 not really	4 slightly helpful	3 somewhat helpful	2 very helpful in transition	1 in some ways, those experiences created the transition

20. It would help to know the factors on which you base your answer to Question 19. If you indicated a program was helpful in negotiating a transition, could you indicate what you believe the transition to be and how the staff development program experience facilitated (or hindered) it.

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21. Learning Style Inventory*

This inventory assesses your preferred method of learning. As you take it, give a high rank to those words which best characterize the way you learn and a low rank to the words which are least characteristic of your learning style. Construe learning in a broad sense across a wide variety of activities, not only academic study.

Different characteristics in the inventory are equally good. There are no right or wrong answers. The aim of the inventory is to describe how you learn, not to evaluate your learning ability.

There are nine sets of words listed below. Rank order each set of four words assigning a 4 to the word which best characterizes your learning style, a 3 to the word which next best characterizes your learning style, a 2 to the next most characteristic word, and a 1 to the word which is least characteristic of you as a learner. Be sure to assign a different rank number to each of the four words in each set. Do not make ties.

1.	__discriminating	__tentative	__involved	__practical
2.	__receptive	__relevant	__analytical	__impartial
3.	__feeling	__watching	__thinking	__doing
4.	__accepting	__risk-taker	__evaluative	__aware
5.	__intuitive	__productive	__logical	__questioning
6.	__abstract	__observing	__concrete	__active
7.	__present-oriented	__reflecting	__future-oriented	__pragmatic
8.	__experience	__observation	__conceptualization	__experimentation
9.	__intense	__reserved	__rational	__responsible

FOR SCORING ONLY:

CE________	RO________ —	AC________ —	AE________
234578	136789	234589	136789

(Scoring will be explained at the ARCS meeting.)

---

*The Learning Style Inventory is from Kolb, Rubin and McIntyre (Eds.), _Organizational Psychology: An Experiential Approach_, Prentice-Hall, 1974.

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School Context Variables
and Collaborative Action Research

ARCS Report IX

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ACTION RESEARCH ON CHANGE IN SCHOOLS

REPORT IX

SCHOOL CONTEXT VARIABLES AND COLLABORATIVE ACTION RESEARCH

Gerald J. Pine

Sharon N. Oja
Gerald J. Pine

Principal Investigators

INTRODUCTION

The purpose of this report is to describe context issues which affect teacher initiated change in two schools. The data for the paper have been generated through tape recordings of weekly action research teacher team meetings, analyses of the tapes, interviews with teachers and principals, and analyses of teacher journals collected during the first eight meetings of Action Research on Change in Schools (ARCS) which is a two year collaborative action research project involving two groups of middle/junior high school teachers, one in Michigan and one in New Hampshire.

Between September and December, 1981, each team consisting of five teachers was observed during eight meetings. Each teacher participated in two in-depth, semi-structured interviews and completed several written questionnaires. Tape recordings of the meetings and interviews were transcribed and used as data. Each teacher kept a written log or journal over this time period, and these logs were used as an additional source of data. On the basis of these data and interviews with the principals and other teachers in the schools a profile of the context for each school has been constructed.

For this paper context is defined as the social and interacting phenomena which surround and pervade the teachers' efforts to initiate changes through action research. Context includes not only the physical and/or organizational properties of the settings, but also the histories, influencers, missions and capabilities of the setting. It includes the nature of the leadership available, the conventions of teaching and learning held by the staff and students, and the perceptions and expectations of the immediate community (Griffin, 1982).

MAJOR CONTEXT ISSUES

A school can be viewed as a unique, complicated, socio-cultural system comprised of a history, norms, values, modes of communication and interaction, expectations, time perspective, role definitions and programmatic and behavioral regularities. These elements make a school different, set it apart from other schools, and constitute a fibrous phenomenology which profoundly affects teacher behavior and school change.

To explore the phenomenology and socio-cultural system of the school, this paper follows the conceptual paths cut by Lortie (1975), Sarason (1982), Little (1981), and Zerabavel (1981) focusing on the contextual variables of the principal, school history, time, collegiality and experimentation, and organizational environment. It is hoped this preliminary description and analysis will provide a coherent framework to grasp and understand the subtle and elusive quality of the gestalt of school context.

THE SEARCH FOR SCHOOL CONTEXT

Our initial data analysis suggests that school change is idiosyncratic and is a function of the unique context of a school and that the outcomes of change, the way change is conceptualizaed and implemented, and the intentions, goals, and technologies of change are mediated by the school's context.

The interacting phenomena and social ecology of the school are elusive, complex, and difficult to describe (Cusick, 1973). The search for school context as a holistic entity has troubled researchers who cannot agree on either the possibility or desirability of identifying and encapsulating the "buzzing confusion of simultaneously existing, multi-level, mutually interacting variables" (Argyris, 1958, 101). Anderson (1982, 371-372) indicates that some researchers view school context as a possible but not desirable focus of research, and like the Albatross only a burden to policy makers who need information on mechanisms that can be easily manipulated to affect student outputs. For other researchers school context is seen as a desirable focus of study, but one which is unattainable - taking on the qualities of the Unicorn: a mythological beast to be hoped for and dreamt about but one which can never be found. Then there are more optimistic researchers who view school context research as both possible and desirable - a Phoenix born of the ashes of past school research. We identify with the latter group and use the lens of action research to examine the complexities of school context.

The interacting variables, unsynchronized intentionality, shifting circumstances, and unintended turbulence of school context require dynamic recursive inquiry and multiple data collection procedures. Action research is the critical piece in our study of the phenomenological, and includes criteria for directing inquiry to accommodate the ongoing shifts inherent in school context. The recursive nature of action research implies there are no stable clearly delineated parameters in the study of school context but rather ongoing infinite revisions of inquiry. We began our study by not assuming that all else remains constant while the teacher researchers and the school are under study.

The action research model in seeking comprehensiveness and understanding sacrifices some of the objectivity and precision of measurement of the experimental research model. Further, in maintaining its relativistic flavor, the model loses some of its authority. In an attempt to compensate for these features of the model we have built in features of the classical psychometric pre and post test model and that is where we begin the search for school context.

ORGANIZATIONAL ENVIRONMENT

Early research on organizational climate relied on perception - the consensus of participants - to define climate. School climate research was based primarily on the work of Halpin and Croft (1963) who developed the Organizational Climate Description Questionnaire (OCDQ) and confidently asserted that "the climate-profiles may indeed constitute a better criterion of a school's effectiveness than many measures that have already entered the field of educational administration" (pp. 82-83). Hundreds of studies have been completed on the OCDQ and its influence is widely recognized by researchers.

At the beginning of the ARCS project teachers were administered the Organizational Environment Assessment Instrument, an inventory similar in its design to the OCDQ. The Organizational Environment Assessment Inventory consists of the twenty-six items dealing with such matters as decision making, staff interaction and cooperation, administrative support, communication between teachers and administrators, and teacher and administrator influence (see Table 1). Results of the pre test administration of the instrument revealed significant differences between the Michigan and New Hampshire action research teams' perception of their school's organizational environment.

Members of the Michigan team perceived that the school administration had substantial confidence and trust in teachers (5), teachers had substantial but not complete confidence and trust in administrators (4), administration was generally (4) or fully supportive (1) of teachers, there usually were favorable and motivating attitudes among the staff toward the school and its goals (4), there was moderate (3) or extensive (1) interaction among the staff, teachers felt somewhat (2) or completely (2) free to discuss important things about their jobs and the school with school administrators, and teachers had moderate (4) to substantial (1) influence in shaping the goals and activities of their teams and departments.

In contrast members of the New Hampshire team perceived that the school administration had little confidence and trust in teachers (3), teachers had little confidence and trust in administration (5), administration was somewhat supportive (5), there sometimes were hostile and not motivating attitudes among the staff toward the school and its goals (4), there was little (2) to moderate (2) interaction among the teaching staff and teachers had very little (3) to moderate (1) influence in shaping the goals and activities of their teams and department.

The Michigan research team perceived that teachers were usually consulted (3) or substantially involved (2) in developing special programs for students and teachers were usually (3) or seldom (2) consulted about decisions related to their work. The New Hampshire research team perceived that teachers were consulted not at all (1), occasionally consulted (1), usually consulted (2), and substantially involved (1) in developing special programs and teachers were seldom (3) or not at all consulted about decisions related to their work.

On the matter of communication the Michigan team perceived that communication between teachers and the administration was adequate (4) and that communication through department leadership to the administration was accurate (4). There was a different perception among members of the New Hampshire team. They saw communication between teachers and administration as not at all adequate (2), somewhat adequate (1), and adequate (1) and communication between the department leadership and the administration as not at all accurate (1), somewhat accurate (2), and accurate (1).

TABLE I

ORGANIZATIONAL ENVIRONMENT

ASSESSMENT INSTRUMENT

For each of the Items on the following pages, please circle the letter under the appropriate response.

Instructional Variable				
1. Does the school administration have trust and confidence in teachers	Have no confidence and trust in teachers	Have a little confidence and trust in teachers	Have substantial confidence and trust in teachers	Have complete confidence and trust in teachers
	A	B NH-3	MI-5 C NH-2	D
2. Do teachers have confidence and trust in the administration?	Have no confidence and trust in administrators	Have a little confidence and trust in administrators	Have substantial but not complete confidence and trust in administrators	Have complete confidence and trust in administrators
	A	MI-1 B NH-5	MI-4 C	D
3. Is the behavior of administration supportive?	Behavior is not supportive	Behavior is somewhat supportive	Behavior is generally supportive	Behavior is fully supportive
	A	MI-1 B NH-4	MI-3 C NH-1	MI-1 D
4. What kinds of teacher motives are used by the school system?	Job security, economic needs, and the desire for status	Economic needs and moderate use of the desire for status, affiliation with peers and achievement	Economic needs, desire for status, affiliation with peers and the desire for achievement and new experiences	Economic needs, desire for status, affiliation with peers, achievement new experiences an motivation arising from group goals.
	NH-3 A	MI-1 B NH-2	MI-1 C	D

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TABLE I (continued)

5. What kinds of attitudes have developed among the staff toward the school and the school's goals?	Strongly favorable and motivating	Usually favorable and motivating	Sometimes hostile and not motivating	Mostly hostile and not motivating
	A	B MI-4 NH-1	C MI-1 NH-4	D
6. What amount of responsibility does the school staff feel for achieving school goals?	Most personnel at all levels feel strong responsibility	Some personnel at all levels feel responsibility, but especially administrators	Administrators usually feel responsibility, other personnel feel very little responsibility	Only administrator feel responsibilit
	A	B MI-5 NH-3	C	D NH-1
7. What is the amount and quality of interaction among members of the school staff?	Extensive, friendly interaction with a high degree of trust and confidence	Moderate interaction, often with a fair degree of trust and confidence	Little interaction and usually with a low degree of trust and confidence	Little interactio and always with fear and distrust
	A MI-1	B MI-3 NH-2	C	D
8. What is the amount of cooperative teamwork present in the school?	Very substantial amount throughout the school	A moderate amount through most of the school	Relatively little, only among a few people	None
	A	B MI-3	C MI-2 NH-5	D
9. At what levels in the school are decisions made?	Most are made at the top administrative levels	Policy decisions are made at the top, others are made at middle levels within stated policy	Policy decisions are made at the top, more specific decisions are made at all other levels	Decisions are made throughout the school but linked through various kinds of groupings
	A MI-2 NH-1	B MI-1 NH-3	C MI-2	D

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TABLE 1 (continued)

10. In what manner are school goals usually determined?	By means of group participation	Goals are set after discussions with teachers	Goals and orders are issued, opportunity for discussion may or may not exist	Goals are issued as orders
	A	B MI-2	C MI-3 NH-3	D NH-1
11. Are there forces existing in the school that cause the acceptance, rejection or resistance of goals?	Goals are fully accepted	Goals are overtly accepted but with some overt resistance	Goals are accepted but often with some open resistance	Most goals are resisted or rejected.
	A	B MI-5 NH-1	C NH-1	D NH-1
12. Do teachers feel free to discuss important things about their jobs with their immediate superiors?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all
	A MI-2	B MI-3 NH-2	C NH-1	D NH-1
13. Do teachers feel free to discuss important things about their jobs and the school with school administrators?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all
	A MI-2	B MI-2 NH-2	C MI-1 NH-1	D NH-1
14. Do immediate superiors (department heads and house leaders) generally try to get teachers' ideas and opinions in solving problems?	Always	Usually	Sometimes	Seldom
	A MI-2	B MI-1 NH-3	C MI-2	D NH-1

TABLE 1 (continued)

15. Do immediate superiors make constructive use or teachers' ideas and opinions?	Always A	Usually B MI-3	Sometimes C MI-2 MH-2	Seldom D MH-1
16. Is the information shared by administrators adequate?	Not at all adequate A MH-1	Adequate B MI-2	Somewhat adequate C MI-3 MH-2	Very adequate D
17. Is the communication between teachers and the administration adequate?	Not at all adequate A MH-2	Adequate B MI-4 MH-1	Somewhat adequate C MI-1 MH-1	Very adequate D
18. Is the communication through house or department leadership to the administration accurate?	Not at all accurate A MH-1	Accurate B MI-4 MH-1	Somewhat accurate C MH-2	Very accurate D
19. Is the communication between teachers adequate for achieving school goals?	Very adequate A MI-1	Adequate B MI-2 MH-1	Somewhat adequate C MI-1 MH-2	Inadequate D MI-1 MH-2
20. How well does administration know and understand problems faced by teachers?	Know and understand very well A MI-1	Know and understand fairly well B MI-1 MH-1	Don't know or understand very well C MI-3 MH-3	Don't know or understand at all D

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TABLE 1 (continued)

How well do teachers know and understand problems faced by the administration?	Know and understand very well A	Know and understand fairly well B MI-2 NH-1	Don't know or understand very well C MI-3 NH-2	Don't know or understand at all D
To what extent can teachers influence the goals and activities of their teams and departments?	Not at all A	Very little B NH-3	Moderately C MI-4 NH-1	Substantially D MI-1
To what extent can administration influence the goals and activities of teams and departments?	Not at all A	Very little B MI-1 NH-1	Moderately C MI-1 NH-1	Substantially D MI-3 NH-3
Does the way in which decisions are made help to create the necessary motivations in those who have to carry out the decisions?	Substantially aids motivation A MI-1	Moderately aids motivation B MI-1	Aids motivation to only a small degree C MI-3 NH-3	Adversely affects motivation D NH-1
To what extent are teachers generally involved in decisions related to their work?	Not at all A NH-1	Seldom involved but occasionally consulted B MI-2 NH-3	Usually consulted but not often involved C MI-3 NH-1	Substantially involved D
To what extent are teachers involved in developing special programs for students?	Not at all A NH-1	Seldom involved, occasionally consulted B NH-1	Usually consulted, often involved C MI-3 NH-2	Substantially involved D MI-2 NH-1

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Both research teams were in complete agreement about the extent to which administration could influence the goals and activities of teams and departments - substantially (3-3), moderately (1-1) and very little (1-1).

The differences between the teams' perceptions of their organizational environments seem to be in part a function of their school histories and organizational structures.

HISTORY

A school's history and traditions transmi˜ attitudes and concepts that facilitate the dynamics of the self fulfilling prophecy and in either blatant or subtle ways inculcate attitudes and views in teachers that render them vulnerable to disillusionment and resistant to change (Sarason, 1982). Institutional history and traditions rationalize current practices, establish norms, values, and behavioral regularities, provide a reference point for judging a principal's leadership and performance, and maintain a continuity of meaning which enables teachers to bring order to the disparate events and forces in the changing phenomenology of the school. To understand the dynamics of change in a school one must know its history and traditions.

The Michigan site school was opened in 1957 as a junior high school (7th, 8th, and 9th grades) with 750 students. In 1968 enrollment increased to 1,000 students at which time the building was expanded. Since then the enrollment had dropped to the current 535 students with an average class size of 34 students. The school had had only one principal between 1957 and 1980. The current principal was a former teacher and counselor at the school. The previous principal had been perceived by members of the team as everyone's "perfect father, grandfather image." He had an open-door policy and made teachers feel that he took care of them. The present principal is perceived as one who does not have an open-door policy and who makes all the decisions. This perception has created some negative feelings.

In 1976 a middle school format was adopted (6th, 7th, and 8th grades) after considerable planning involving teachers and community representatives. Since then there have been many changes.

The teaching staff remained stable until the school became a middle school. At that time teachers were transferred to the school from the elementary and high schools in the system. The involuntary transfer of teachers from the high schools initially made them feel like it was a "step down." The research team's teacher survey indicated, however, that the majority of teachers are content teaching in a middle school.

Initially, as a junior high, class periods were 45 minutes long. With the inception of a middle school format, the scheduling was changed to block and team teaching, in accordance with the adopted middle school philosophy. Within the past few years, there has been a return to the traditional junior high scheduling format - 45 minute class periods - even though it still has the same written middle school philosophy. Members of the research team expressed the desire to return to a schedule consistent with the middle school philosophy and one designed to meet the diverse and changing needs of middle school children.

Teachers in the district never "enjoyed a period of time when we've had lots of money." Historically, teachers had created the programs and felt an ownership in the move to a middle school. "We felt like we were forerunners. . .in many areas of curriculum." Now teachers perceive changes in central administration have ended teacher involvement in the curriculum process. The staff finds it difficult to adjust to imposed programs, and the research team hopes that it "will have some impact on our district in terms of curriculum development, keeping that input by teachers."

In contrast to the Michigan site, the New Hampshire site school's history and traditions are a dramatic counterpoint. From 1970 to 1982 the school experienced numerous changes because of changing leadership. In 1970 the school consisted of two buildings designed to hold 550 students yet housing as many as a thousand students. The school went through a number of organizational, physical, and demographic changes of substantial nature. These changes included double tracked ability grouping in mathematics and English, flexible multilevel parallel tracking, new science program, the initiation of a faculty senate, the dissolution of a faculty senate, classroom accommodations for parochial students, split sessions, homogeneous grouping, heterogeneous grouping, department head organization, house coordinators, and finally five different principals. Continuous changes in leadership and organizational structure with little teacher involvement in decision making had a negative effect on teacher morale over the years.

In 1977 a Teacher Corps project began in the junior high school. Previously the school had not received any kind of special federally funded project. In 1975 a new principal had reorganized the 850 student junior high from a traditional departmental organization to a schools-within-a-school format to more adequately meet the needs of preadolescent students.

In September 1981 the principal resigned in order to accept an assistant superintendent position in a larger city. The new principal was appointed in November, 1981. He was a previous junior high school teacher at the site and also a house coordinator of one of the schools-within-a-school.

Class size at the New Hampshire junior high school averages 20-25 students. Sixty-one staff members work with approximately 660 students. The schedule is a traditional junior high format of 45 minute class periods. Classes are basically heterogeneously grouped with some advanced math and English classes. The school presently has three house coordinators, one for each of the schools-within-a-school. Next year, the principal will replace house coordinators by department chairs. The team's research focus is a reaction to the number of principals and changes it has experienced. "We're really striking out to find the ideal setup, schedule-wise to serve the individual needs of the students." The new principal is perceived as being receptive and the team hopes with his apparent sensitivity to teachers' needs . . . "that morale will improve and things will be on the upswing."

THE PRINCIPAL AND SCHOOL HISTORY

There is a reciprocal relationship between the history of a school and the role of the principal. On one hand, the principal's perception of a school's history and structure is a key determinant in establishing the school's agenda and directions. On the other hand, the principal's degrees of freedom in exercising leadership and influence are bounded by the school's history and traditions. The principal views his or her role, as do many others, as implying leadership. Initially the principal expects and wants the school to bear the stamp of his or her conception of what good education and a school are. The principal wants to be and to feel influential. The dilemma begins when the principal realizes that words and power, far from guaranteeing outcomes, may be ineffectual and even produce the opposite of what is desired. The dilemma in leadership is further aggravated by the fact that often proposed changes for the school do not come from the principal but from sources in the system ("downtown"). The point is that regardless of whether or not the principal likes the proposed changes he or she is in large part responsible for implementing these changes in fact and spirit (Sarason, 1982).

For the principal at the Michigan site the history and personality of the school were factors to be considered in exerting leadership for change.

> The school here, the organization had a personality. I didn't want to destroy that personality but there were portions of it that were not my style. There were some things in it which I had previously identified as being less than adequate, from my point of view and from what some staff members had said to me informally and from what had been said to me in some degree by Central Office. They had said you're getting a plum of a school, best school in the district, but that school's got to become a part of the district, you can't always go it yourself. I think schools do have personalities, I really do, I think the attitude of everyone together forms a personality of a school. A lot of what the leader does, the principal does, in a school affects the personality of that building. There are an awful lot of good things going on in this school that I didn't want to destroy in any way but on the other hand, I knew that I functioned differently from . . . I also knew that I had to make some changes because I had a mandate, more or less, from central administration of let's get this thing into the mainstream, you've got a school, tighten up. So individual staff members had said student discipline is lax in the building. So those were givens that I knew I had to handle and if I didn't handle them, I wasn't going to be suc-

> cessful. I also know that I am a person who is more comfortable if I am doing and if I am handling things than if I'm sitting back waiting just for things to happen, I can't do it that way. Ahead of time, I thought about what are some of the things that I need to handle? With the reorganization of the middle school, I probably came in at that point, what with doing away with teacher-leaders, reintroducing the concept of an assistant principal, even halftime in the building, introducing the teacher support person, I probably came in shaking up part of the staff, which was probably a good thing because the structure became different thus I could make additional changes, and it was more comfortable, I think in some ways, for staff because they could almost say, well, everything's changing anyway so... In some respects it may have been more comfortable for them if nothing had changed and I had come in and tried to make little changes, a little change here and a little change there.

The principal decided to make changes which would not intrude on the personality of the school:

> When I came in I recognized that there were some changes that had to be made. I identified some changes which I thought would help me be a better leader, would keep the personality of the school pretty much intact, would strengthen it academically, and hopefully make everyone a little more responsible for what they were doing. I zeroed in on some very routine procedures which would just make it easier to run. Then on some key things on responsibility, discipline side for kids and some for teachers, these are my expectations. This is the structure of the organization, staff meetings at 10-, those kinds of things. Little things like you will be on time for class, I expect you to be on time.

For the principal the greatest obstacle in achieving change was the staff's perceived history of the school:

> The experiences that people had prior to your coming get in the way, or at least the perceptions of their experiences because where I

> followed a person who had opened this school and was so much a part of this school and some of the things that went on were perceived by part of the staff to be less than perfect and by another portion of the staff to be more than perfect so people's perceptions of what went on before you came can be an obstacle because there is a comparison factor about we didn't do it this way or we used to do it this way. So certainly what people perceive as what went on beforehand is an obstacle. The lack of anything formally written down within the building on one hand is an obstacle because when you come in to an organization that doesn't have any formal rules at all you don't have anything to follow and you start devising things in order to make the organization run. But on the other hand, that's not an obstacle in that whatever you do at least you're doing something and whatever structure you attempt to give is more than there was which isn't a bad thing.

Without a knowledge of the school's history there are possibilities of irritating the informal understandings of school staff:

> But again it also means that because there isn't a history of formal structure you keep bumping your nose against these things that no one ever formalized but informally were the accepted mold and that could be very difficult. A couple of times I wrote out a communique or said in a staff meeting thus and so and then would hear later there would be some grumblings because it had never been done that way.

The principal's views of the school's personality and history complement the teachers. The school's history can be characterized as one of relative stability, continuity, consistent long term leadership, informality, predictability, and until recently, sustained teacher involvement in decision making.

At the beginning of the project the principal of the New Hampshire site school resigned to take a new position in another school system. His retrospective analysis of the school's history and of his leadership suggest that a school principal's behavior and perceived effectiveness are embedded in the social context of his or her school system. Leadership is influenced not only by the talents and predilections of individuals but also by organizational and community relationships.

The principal's initiatives in introducing change emanated from his and the school board's concern for taming the perceived "jungle" that was the junior high - for making the school a place where the needs of pre-adolescents would be addressed.

> When I started here, I was under the opinion that probably the impact that teachers, administration made on the total school, the changes within that school, would be far more strong than those of the public, the outside. I think now that I would change that view, I would say that I underestimated public opinion and how the public views a particular school, and what the public can do to make an impact on that. I think it's a lot stronger than a lot of people think and I think that something like that really has to be, I know that in the future I will really take a lot more notice of that. When we started, when I started, 6 1/2 years ago, the public, meaning the public school board and their effect on the school board, I believe, viewed this school as a jungle. They thought that it was . . . From what I saw, I guess, and what I heard, there were some reasons to believe that, I don't know how much might have been overestimated but it was in some ways like that. It was a very traditional kind of school and certainly according to research, not the kind of setting for children ages 12 and 13 to be part of.

There were serendipitous events which favored the introduction of a new approach - a different organizational structure for the school. The principal used these opportunities:

> Now, as far as the change that took place, a lot of ingredients helped to cause that change into what caused the school within a school program. The fact that there was building under construction the first year I was here meant there was prime opportunity to meet with teachers because their day was cut in half because they only taught half a session so the

> other half day I could meet with them. I was expected to do something with them because they'd, otherwise, have so much free time. So that worked out. The fact that the teachers, for the most part, were receptive to something to happen was because of how they regarded themselves already as in a bad situation. All these kinds of things as well as their involvement in what was going to happen, the change that would take place, they investigated; they looked at different types of schools.

The principal wanted to organize the junior high school into four "schools within a school" with each school representing a different philosophy and approach. The alternative schools would offer parents and students choices in selecting an appropriate learning environment in the junior high school. The principal chose to "guide" change rather than mandate it.

> Schools within a school wasn't forced down their throat; they chose it. I think looking back, I would say that I was a guide to that. I think that I wanted the school within a school right from the start. But I'd like to think that I didn't force it down anybody's throat. I think that I had enough confidence in the people here and their intelligence and in the kind of impact and the value of the school within a school that they would recognize that and, once they had investigated other things, as well as that, they would choose it just like I chose it, and they did.

Significant support for facilitating the desired changes was provided by a Teacher Corps project which in the principal's view affected approximately one-third of the professional staff.

> Everything seemed to fall into place. Teacher Corps grant came along and helped people to get more knowledgeable about individualizing instruction and heterogeneous grouping and all kinds of things they'd never done before. Change came to, I would say, 25-35%. Then, about 2 years ago, I guess, public opinion started changing. School board members changed. The school board members who were on the board when this place was recognized

as a zoo, whose children were here then, now you've got new members whose children were in second grade then. They didn't remember what it was like. They only know that now you've got teachers who are separated into four different schools, each one with their own classrooms; they multiply the number of teachers or divide the total number of students by the total number of teachers and come out with a figure like 14 and say, whoa, this class student-teacher ratio is much too small. We can get rid of 8-10 people here and come out with a ratio of 20-25/1 and be much better off. They just completely disregard the organizational structure, the process of change that took place over the past three years. They go on the basis of dollar, cents, student-teacher ratio, black and white, that's it. And that's what they start to do. I guess what happened then was I think the reason why it didn't change overnight from four schools to one school or from heterogeneous to homogeneous grouping, or from house coordinators back to department heads is because I was fighting not to have it happen. So instead of it happening all at once it was happening in little bits and pieces and its still happening. Now we're down in essence to two schools, we call it three but it's really two. What was a seventh and eighth grade school is now teams but the seventh grade part of the team doesn't meet with the eighth grade part of the team. It is watered down a lot from what it was. It is still happening. The house coordinators I think are doing a good job. The role isn't what it started out to be; I don't see them as being facilitators of interdisciplinary teaching or the kinds of things we were talking about earlier. They're working with discipline which is necessary but isn't what the program was in the beginning. It just seems to be going back more to the traditional kind of school. To me that's indicative of a board and a public that want that. Right or wrong, talk about the pendulum swinging, it's swinging. It's swinging that way.

The principal was disappointed in seeing his work undone by forces beyond his control. Despite his efforts to retain the changes that were implemented, he saw the school reverting to a traditional junior high school.

> It's a junior high! I see it continuing that way unless, who knows, maybe when I came in here as a new principal, the tendency is that a new principal, people during the honeymoon period, if you're going to get things you better get them then. That's when you're most able to convince people, when you're new. And I think that's what I did. In looking back I wouldn't change too many things. I wish I could have convinced people to keep what they had but I think I did pretty well as it was based on talking dollars and cents in a time of inflation, I don't think I could have done any better than what I did to keep things in place as long as I did.

The note of melancholy, of resignation, mirrored in the principal's words highlight a historical profile contrapuntal to the history of the Michigan site. Instability, frequent organizational changes, changing leadership, erratic and inconsistent teacher involvement in decision making, and uncertainty are features which define the history and environment of the New Hampshire site school.

TIME

In New Rules (1981) Yankelovich observes that a significant number of our population have aspirations which are less family bound than they were just two decades earlier and their time commitments are dictated primarily by their own aspirations for self fulfillment. They maintain complex personal time schedules, often involving major commitments to education, travel, personal health and exercise programs, experiments in interpersonal living, and child care arrangements. They are involved in a variety of what used to be called "leisure pursuits," as well as in their work as a source of both income and personal satisfaction.

The dynamics of these people's lives are a countervailing force to the time demands imposed by the older family bound industrial order. As a result, many employers and employees are now experimenting with a variety of new personal time styles for individual workers. Flexible work schedules, job sharing, reallocation of work time, released time provisions, and other work time schemes, all increase the flexibility of institutional time systems to respect a variety of personal time schedules and styles, and to accommodate easy movements of individuals into an out of work organization.

Where do public school teachers fit into all of this recent time experimentation? Briod (1982), in his study of the American school time system, hypothesizes that teachers are viewed as a base of traditional middle class reliability in American communities teaching under a relatively unbending school time system at the very period in our history when experimentation with personal and social time is increasing in society at large. While community people may point with envy to those vaunted summer vacations, and with anger to what seems like short daily school time schedules, they require the regularity and reliability of school time in order to plan their own flexible schedules. Teachers, on the other hand, feel bitterness towards a school time system that seems excessively bureaucratic, vaguely sensing that the American "time revolution" is passing them by.

Time conflicts and problems are continually frustrating to teachers, administrators, and to all those who work within the school time system. Time is a valuable resource and is "the single most important general resource teachers possess in their quest for productivity and psychic award; ineffective time allocations are costly" (Lortie, 1975, 177). Teachers have fought to get control over the use of their time; many collective bargaining agreements have detailed specifications on the extent to which management can make extra time demands on teachers. Contracts are likely to concentrate on "extra" time outside the regular working day. Teachers have bargained to reduce the proportion of inert to potentially productive time in the working day (Lortie, 1975).

The principal allocates the resource of time which matters so much to teachers. Time schedules are worked out under the principal's supervision and the principal's decisions about schedules profoundly affect the teacher's work life. Control over the allocation of time is one of the principal's sources of power, influence, and authority. The principal's decisions in this area vitally affect teachers' working conditions and their attitudes. The principal is also the person in the school who has the most discretionary time, a characteristic of professional autonomy and status not unlike that of the lawyer, doctor or dentist and a source of envy among teachers.

It is not surprising then that both action research teams independently identified the problem of scheduling for their research investigations. The Michigan action research team in its research proposal defined the problem of scheduling in terms of the impact of time allocation on the school:

> We see scheduling affecting all dimensions of the middle school. Time is one of the most precious resources in the educational system and decisions about its allocation affect the curriculum, student learning, student and teacher relationships, and opportunities for innovation.
>
> The schedule reflects priorities and values about the educational process in the school. It can provide significant flexibility or severely limit flexibility. It can promote collegiality or fragmentation. The schedule can serve the school and its students or it can make the school and students its servants. The ramifications of scheduling are pervasive and touch upon almost every aspect of the school. In our judgment it is an area worthy of action research.

Among the Michigan teachers one finds a persistent concern with issues dealing with time. They are concerned, for example, with the question of inert and potentially productive time (Lortie, 1975, 176). Inert time refers to occasions when the potential for learning is absent or very low because the teacher's activities are not instructional. Clerical duties, interruptions, time pressures, and extra duties all involve inert time. Potentially productive time refers to occasions when the teacher is engaged in either direct instruction of students or activities closely related to it.

Members of the Michigan action research team describe instances of inert time:

> I've been noticing, too, that by keeping the journal it amazes me how many things we don't have a lot of control over in the classroom. And it's not only interruptions like that, it is little kinds of things that happen with kids that you have no control over that you can't get through a class period without doing. I've been very conscious of the fact

that we talked about interruptions in the day, I can't get over the number of . . . now I'm very conscious of it and I watch for them. Even a kid coming to the door, you hear this little knock at the door and I ignore it the first time and then you have to stop teaching.

In my first hour class, I had two kids selling candy, but the announcements, so many interruptions on the PA, you know, and they come into all our rooms, whether or not anybody is involved and they always say, I'm sorry for the interruption, but that doesn't help. I mean, that can break a mood faster than anything. When you're trying to discuss a story or get a point across or whatever, you know? I think, too, just going back to the day they announced the winners because kids could win $25 or something for selling candy bars, right before lunch they came on with that and you work so hard to keep them busy and quiet until one or two minutes to go because otherwise they're starting to file through the door already. You know, they want out and so you're working so hard and all of a sudden, five minutes so they come on with the announcement and then the flow is gone.

We were talking about that yesterday because the PTA just had a candy bar sale and they gave the kids these little cartons of candy bars to carry around and they ended up selling thousands of them to one another. And it was every morning they'd come on and say, you know, everybody who has money, to turn in come down and that would take care of half of your first hour. They'd march out and then they'd start dribbling back in again. And we'd just got over that, we were just beginning to feel like things were back to normal and they started a magazine sale. We were complaining among the that we don't have any

> control over that. Before with our old principal we didn't have any sales, period. But now there's always something being sold. Now when this is over, I guarantee you, it will be buttons, we go to the buttons then. And then that will be the the big thing, then back to the book covers.

> But one or two things come up like all these sales and you just do them. Now tomorrow and next week they will haul kids out of your classes all morning long.

"There is an undercurrent in these responses, then of more than annoyance at work disrupted and time lost. Those who intrude on the teacher's scarce time are doing more than inhibiting work processes; they are manifesting a lack of respect for what teachers consider their core function . .. the teacher's craft is depreciated" (Lortie, 1975, 1979).

Zerubavel (1981) suggests another way of looking at time. As a principal of differentiation time serves to keep apart the private and public spheres of life. Time is a major organizational principle which facilitates the institutionalization of privacy as well as the segmentation of modern individuals along the lines of their various social and occupational involvements. By providing some fairly rigid boundaries that segregate the private and public sphere of life from one another and to which the association of person and role is confined, time has become indispensable to the regulation and maintenance of the partiality of each of their social and occupational involvements. We can view the relative degree of the individual's social and occupational involvement at any given time as a proportion between private time and public time. "It is in the domain of work that the temporal segregation of the private and public spheres of life can best be appreciated. Probably nowhere is the modern temporal segregation of the "private self" from the "public self" more clearly evident than within this domain" (Zerubavel, 1981, 148).

For members of the Michigan action research team the time pressures involved in grading and evaluating papers create feelings of frustration, guilt, and resentment -- for them the boundaries of private and public time are blurred. Their occupational role claims their reluctant allegiance at home, on weekends, and into the night.

> I just am spending most of my weekends checking papers and I begin to resent that already and it's just October. And like you said, this past weekend, I just felt like telling the kids no, I didn't get to it this weekend, sorry, it was a nice sunny day and we wanted to enjoy the day, too, and, you know, you get caught in guilt. I see that it's a real problem, too. I don't know why this year is just really hitting me, maybe I'm doing more thinking about what's going on in the classroom.

> I tell them at the beginning of the year, don't ever ask me when you are going to get those papers back, that is the worst question you could possibly ask. If anybody does, when are you going to get back our vocabulary test? Everybody yells, when she is done checking them. But I think they know when they get papers back that I did read them, they know I was really working on them, I don't have any problems along that line, the problem is with me. It gets just to be a bug-a-boo, you just hate it.

> You know what, too, I find that the guilt trip itself wears you out. It wears me out. If anybody would say that you suffer, you put the guilt on yourself, I'd say I do not, but I do. I make it worse for myself. I come in some days and I think, I told them I'd have the papers done today. Before I know it I'm in there shaking, I'm not really shaking but the guilt inside of me is eating at me so badly, I think, oh, God, please don't let one ask me because I'll just, it's horrible. The guilt is 3/4 of it.

> I was exhausted. It did seem so unfair to me there are so many things I want to do as a woman, and a wife, and homemaker or whatever, that I want to do as a teacher professionally, and I can't find the time for it. It is horrible. There has been more than one time when I wanted to write in that journal and I just said, I'll get to that later, I have to get this stuff done first. And by the time I sit down I have lost the idea or it doesn't seem to impress me as it did. That is the unfairness of it.

The Michigan teachers find that controlling the intrusions on their personal and private time is difficult if not impossible to achieve:

> I decided to see if staying in my room during lunch and working on papers would help at all with easing the take-home load. Have been doing it for about a week and I don't think it has helped that much. I don't get very much done and what is worse, I really lack energy for the afternoon without that break. I enjoy the talk and the sharing that we do -- and I feel deprived of that. I would rather take the work home and take advantage of the break.

> Report cards are due next week Friday, the 13th. Again, I find myself in a paper-back-up predicament. I collected short story book reports (3 from each of my 8th graders = 180 and 1 from each of my 7th graders = 60) a week ago last Monday, and I'm still trying to find the time to read and grade them. Why, oh, why, do I do these things? Every year I promise myself that I won't get myself into this mess, and every year I'm in the same mess. When will I learn? How will I change?

> How can we change our own community's perception of us as teachers because they seem to think that we are overpaid and not doing what we should be doing -- as much as we should be doing, because we only work from 8:30 'til 3:10 or whatever.

A Michigan teacher researcher in her journal describes the death of a colleague and in one poignant sentence captures the onmipresence of "papers:"

> Sad news today . . . a fellow teacher with whom I spent considerable time this summer and early this fall was found dead in her apartment this am. She never showed up for school and never called to notify the office of her absence, so the police investigated after receiving a call from the administration. There she was in her bed, surrounded by her papers.

Another teacher shares her feelings of accomplishment achieved at the cost of precious weekend time:

> I spent Saturday evening and Sunday morning grading tests. I feel very good about getting them all finished.

But the personal cost for conscientiousness - for committing one's personal time to constant work at home are too high:

> There's no way I could give everything (papers) back the next day. I mean, I could if I went home and started right away and stayed at it until 11 o'clock and didn't do anything else but I can't do that. I can't take this job home with me and not do anything else, that just drives you crazy.

One finds running throughout all these comments the theme of incompleteness -- for Michigan teachers their work never seems to be done. Teaching is never-ending reaching into their private time sapping them of energy and causing feelings of frustration, guilt, and resentment.

This theme of interminability of workload is not found among the first eight weeks of journals and team meeting dialogues of the New Hampshire teacher researchers. The concern about work interminability among the Michigan teachers may reflect the nature of their teaching assignments. Three of the teachers teach English and reading, one history and reading, and one science. Among the New Hampshire teachers two teach mathematics, one reading, one science, and one social studies.

While there appears to be a clear difference between the two teams on specific dimensions of the context variable of time there is a common shared concern about the variable of scheduling.

COLLEGIALTY, MORALE, AND THE SCHOOL SCHEDULE

The lonesomeness and isolation of teaching have been well documented by Lortie (1975) and Sarason (1982). The boundaries of the classroom and cellular forms of school organization minimize teacher-teacher interaction, the rewards of teaching are experienced in isolation from peers, contacts with a variety of adults are limited, almost all of the teacher's time is spent with children, and consequently, teachers are psychologically alone even though they are in a densely populated setting. The isolation, autonomy, and loneliness of teaching mitigates a sense of common purpose and responsibility, a sense of belonging, give and take discussion, collaboration, and a norm of innovation and experimentation.

Teachers are not loners by design. The documentation of the Michigan and New Hampshire Action Research teams point to the school schedule as one of the major stumbling blocks in creating opportunities for collaboration, and a norm of innovation and experimentation.

Teachers in both schools want time to share their ideas and discuss their work. A Michigan teacher in a team meeting reflects a common concern:

> I just wish there was time for more. I just wish I could talk to you more. I wish there was something that could really change. Seminar dates, or that kind of sharing, I don't know. I don't know how it can be worked in, it is definitely necessary. I feel that good things come out of it.

Satisfaction in the classroom is no palliation for loneliness and isolation. The need for jointly planning and preparing instruction and materials, for sharing concerns and for building relationships, is not fulfilled in the classroom. Collegiality requires arrangements which permit continuity and opportunity for developing relationships -- an element which is critical to building and maintaining morale. The comments of a New Hampshire teacher capture the desire for interaction and the mood of despair:

> I like my students, I like what I'm teaching, I like the kinds of things that are happening in my room, but the structure that surrounds me is so impossible, in terms

> of scheduling, trying to get teachers, you know, I have a horrible time communicating because I never have any time when anyone else has time to talk. Consequently, a lot of my stuff is like we have to talk . . . if and when I want to team teach we have to talk about the stuff and I don't mind, but some people really do not, or cannot, because time does not allow so the morale is my biggest thing. -810-

For this same teacher the Action Research team meetings offer the chance to develop collegial relationships:

> Today's meeting accomplished much in terms of group members 'getting to know' each other better. Even though we all work in the same school and teach some of the same kids we meet as people and faculty very infrequently. Therefore, opinions are formed by others' comments and gossip. I feel this 'getting to know' each other is important for a successful group and for formulating our ground rules.

In the ARCS schools we find that teachers perceived the principle mechanism for promoting collaboration and sharing is a schedule which provides common time for planning and discussion. The history of scheduling in the site schools indicates that time for joint work was not always a problem and common planning periods contributed to group cohesion and morale. In several meetings members of the Michigan team, with some nostalgia, portray a halcyon time of sharing:

> But didn't we feel good about the work when we all got together, many of us had been trained in generic skills, and said, okay, everybody, in this huge room, what are you doing? What really have you learned from this if anything at all? And when we compiled this list it was fantastic, and it was really going on, back to, it is happening in my classroom that is where it is happening, this change is going on and we had time to share with each other, so maybe that is something that really needs to be brought in. That those trained in generic skills just had some time to share.

> We don't have that freedom anymore to go into another's room like we used to. We could go back and forth and we did have the time to observe one another and share, but we have schedules now that have us so blocked in, we don't have that same time.

> When you have a planning period, there may have been six or seven people in that planning period. As opposed to two or three people in different parts of the building.

Emerging from the comments of the Michigan team is a one-time portrait of mutual support, group cohesion, free and open exchange of ideas, initiative, feedback, and a willingness to experiment and innovate -- all resulting from the block scheduling of a group of teachers.

> We had these seventh grade blocks and they put us together, the eight of us. Well, all of us had planning periods together. That was so neat for the eight of us. We became so close. The eight of us! You came into a staff meeting and you would go right for your people. And people would say, 'Oh, those seventh grade block teachers!'

> We had a child that year and we were like a family, now that I think about it. It was enjoyable. The kids moved together, and I could go and say, 'Watch out they are horrible today.' And you were always ready. There was always somebody backing you up. And it was not unlikely if I said to Jim, 'Would you take my kids?' And he would stick the kids in one room and do something so that somebody else could have some time free so that at the next stage you could have something ready to take over for him. It made for morale.

> Like you'd see her mimeographing something when you knew she had a class and you'd say, 'Isn't this your free hour?' and she'd say, 'Yes, but Jim's in my room.'

> We would have staff meetings ourselvss. We would meet three or four times a week before school started.

> It's funny, but when people have the opportunity to plan the change themselves, the kinds of things that will come out. The eight of us would get together for these group morning meetings at some ungodly hour, and we planned, and we planned, and we planned and we'd try it and we'd say, how did it work? Boo! And we'd start all over again. You know what I am thinking. What if we had to meet now, and we were not the ones planning it, but were told to be here Monday, Wednesday and Friday at 7:30 am. That is something we used to plan ourselves. And if you walked in late everyone was 'ah-ha'and it was a big deal.

> We would try things. It's called adlibbing, winging it. You didn't mind telling someone to get off it, that didn't work so let's get there. Let's do something else. You're going off totally in the wrong direction. We told people that, and we were told that. We could try things out. It didn't matter.

> We were so obnoxious. We were great!

Members of the New Hampshire research team share similar concerns about school scheduling. Changes in scheduling practices have affected opportunities for teaming and particularly school morale. In their journals and team meetings frustration about the school schedule is a pervasive theme:

> I advocated the study of scheduling because 1) it affects all aspects of this school, 2) especially morale, the #1 problem, 3) many complaints center on scheduling.

> Scheduling seems on the surface to be a rather mundane issue. It is also elementary to the general morale issue.
>
> Morale is a problem, a problem caused by a more basic situation. Incompatible scheduling is the real, the root problem.

Scheduling practices which cut off colleague support and opportunities for teaming take the joy out of teaching. In isolation without peer recognition and assistance teaching offers little. One of the New Hampshire teachers speaks of his discontentment.

> I think Holly hit on something very important when she said, 'Remember when teaching was fun?!' She's right, the fun seems to be gone. Why? Year after year of schedule changes which offered curriculum and isolation from teams (last year I worked with a team of teachers -- coordinated curriculum, discipline, great support group -- established friendships and other levels of interpersonal relationships) last year was a great year and I recognized it.
>
> This is the year of my discontent -- I feel a need to resolve my feelings that teaching has little to offer me at this time in my life. I fear the reaction of several colleagues who have been teaching 15 or more years. They talk about being discouraged and unable to find rewards.

In another part of his journal the same teacher reports:

> Too much real or imagined stress and an inflexible schedule seems to stand in the way of positive change. Teachers feel uneasy, unhappy -- 'ill'-at-ease -- this is transmitted directly to students who act out the change in adolescent ways -- graffiti. When teachers are happy they are usually positive and productive and innovative (creative). This is transmitted to the students -- the results are visible products.

What especially frustrates teachers is that schedules seem not to be designed to meet educational needs. Schedules are changed for a variety of reasons but without teacher involvement. A New Hampshire teacher describes his experiences:

> I enjoy teaching seventh and eighth graders, but I hate the changes we always make because of money, convenience, and the whims of principals, seldom for the good of students. Our times are arranged because of buses, lunch program or music activities, not education. I went to two meetings and as a group we decided to do things but at the end were told some facts we could have been told earlier. I felt here we go again!

Later on in his journal he observes:

> Schedules pose a problem every year in this school. I would like to research: 1) state laws on class time, classes necessary, school time; 2) research ideal class length for junior high school classes; 3) staggered schedules for special teachers. Whenever an idea comes up about a schedule change you always receive the same answers from administrators. Either money, staff, or state laws prevent the changes.

An interview with a school administrator yielded a different perspective on scheduling. His comments suggest that while the price for building a schedule around custodial concerns is the loss of collegial opportunity, it can't be helped:

> We couldn't recover the team type thing that we had before and the teachers did not have an understanding. I mean, they can say they do but they don't really understand how schedules are put together and also the fact how you've got to fit everything in to take care of everybody and you know, lunch problems are tremendous issues. It may seem a small thing in their eyes, but it is a tremendous problem, even to get the coverage or to get the people to get their free time. I don't think they see that, and I think that's what causes a lot of problems, and I think it caved in, and I think they blamed a lot of that on us.

Michael Kirst (1982, 7) has suggested that public schools can improve in hard times by attending to alterable variables that do not add to costs. He suggests that among four variables the first such variable is time and that present practices in the use of time "undoubtedly need reform." The variables of time, content, materials, and teacher quality lie at the core of the educational process. They also have been most resistant to lasting reform. The ARCS teachers would agree that the allocation of time through the school schedule is a critical variable. Their comments and observations indicate that the schedule is a source of morale problems, it affects the curriculum, it affects the movement and grouping of students, it affects collegiality and innovation, and it establishes the pace, tone, quality and rhythm of the school. In summary, the teachers seem to be saying that the organizational life of the middle/junior high school is anchored in its time.

One of the principal features of secondary schools which distinguishes them from elementary schools is the organization and allocation of time. The elementary school teacher by and large controls the schedule of activities in the classroom throughout the day. The teacher has autonomy and flexibility in allocating instructional time and managing the ebb and flow of life in the classroom. In contrast, secondary teachers are locked into more of an industrialized assembly line model of time arrangements which are organized around the custodial concerns of busing, lunchroom supervision, and special services.

In selecting the issue of scheduling as a research topic the ARCS teachers imply that scheduling is an alternate variable -- a feature of school life which they believe can be changed.

> We could reasonably expect our input to influence future schedules (unlike other aspects of the program). An improved schedule could be an important factor in school morale.

What will happen if significant changes in scheduling are not brought about by the ARCS research projects? "Teachers may greatly value school-wide changes, yet hold very low expectancy that improvements will occur. The stream of values rewards from classroom teaching and expectancies of obtaining these benefits are often better known than the uncertain consequences of organizing school-wide to address problems of staff morale or redesigning the curriculum" (Fuller, Wood, Rappaport, & Dornbusch, 1982, 12). The ARCS participants seem to expect that through collaborative action research they can alter scheduling practices. If they are not successful, then they may take refuge in the classroom.

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> I am now back to give me a room, chalk, and students, and I will teach, that's where I started in 1962 . . . I retreat into the classroom, not out of the classroom.

To alter scheduling practices the collaborative action research projects will have to influence the principal. In the site schools it is the principal who, with administrative associates, determines how the schedule of the school will be organized. If the ARCS teachers perception of the schedule as affecting curriculum, flexiblity, collegiality, experimentation, and educational priorities is true then it follows that the principal exercises a considerable degree of leadership and influence through his/her control of the schedule. In the ARCS schools we find conflicting and mixed feelings about the role of the principal.

THE PRINCIPAL, THE SCHOOL, AND THE CLASSROOM

Undoubtedly, the principal is a primary variable in the study of school context. "Conceptually, the inclusion of leadership in a discussion of context sometimes causes difficulty. If, however, one considers the people and setting as interactive and mutually reinforcing, it is essential to give attention to who is in charge here?" (Griffin, 1982, 8).

Throughout the first eight weeks of the ARCS project concern about the appointment of a new principal was an over-riding theme in the journals and team meetings of the New Hampshire teachers. Because the school had a history of frequent changes in organization and leadership and was experiencing morale problems, there was a high expectation and hope that a new principal would turn things around.

> I'm sort of looking at the principal as coming to the school and helping that situation, and I'm really unrealistic about it. I know that I really shouldn't think that the principal is going to be able to bail the school out and create a less stressful situation, but that's my high hopes and I was told not to get my high hopes up too much. I should be realistic.

> I made some notes concerning some issues discussed today. The one that really crystallized was, 'How will the new princial affect me?' This question has stopped the flow of my writing. I know some things that I hope will change: morale more positive; schedule reorganization to include me with a team of academic teachers; more positive relationship with administrators in this building; adequate guidance counselor coverage for girls and problem kids. How will the new principal affect me? The biggest change will be my attitude.

> I hope I will be able to support the new principal. I have hopes that 'things' (problems common to all faculty) will change for the better. I realize that there seems to be a few that do nothing but complain and criticize. They feel comfortable in that role. It's easy. Making change and being positive is work! It's easier to say, 'It's not working' (etc.).

> The principal controls the elements of change -- number of staff in area, schedule, budget allocations, tone of interpersonal relations, level of academic involvement. This can be transmitted *formally* by what the principal shares with the staff or *informally* by what the staff 'sees' as decisions that the principal is able to influence or make.

Teachers looked to the principal for leadership in developing a sense of community but not in influencing their classrooms:

> The principal hasn't changed the way I teach in my classroom for 16 years and hasn't affected me personally per se as a classroom teacher but has affected the overall philosophy of the school which I think is where the morale problem exists, that exists now, not with the teachers that are unhappy about the way that they teach in their rooms as much as they are

> with their relationship with the rest of the school people and whether they're listened to or that type of thing. But as far as affecting me personally in the classroom, that type of thing, it won't affect me a bit.

Autonomy and isolation provide teachers with the opportunity to control the workplace of the classroom. They ward off and reduce the principal's influence "granting the principal hegemony over corridors and assemblies and all other areas save their classrooms" (Lortie, 1975, 202).

> Because my observations have been a lot of different principals in different school systems, I figure that: 1) if you do not send students out of your room, you are not bothered by principals; 2) if parents or students don't complain you are left alone; 3) if you don't complain, no one bothers you; and 4) if you give the appearance of order, everyone leaves you alone.

> My first two years of teaching I hit upon this scheme so that I would get good evaluations since they rehired you upon your evaluations in those days. Immediately whenever an evaluating type of person, be it the assistant superintendent of schools or the principal would walk into my classroom, I would go into a review of what we did the day before, and you'd ask questions and the kids have their hands up to answer them because we already had done that, and we'd go through it and it was like oh, quick, didactic, fast pace style straight through it. I always got great evaluations and nobody knew what I was doing. My first year I taught science without textbooks because they'd never had seventh grade science textbooks before so I made the course up as I went along. That worked for a couple of years. Then I taught in private school so that was a whole different ball game. And then teaching back in the public school again, the first time I was in this school situation the principal walked in the room, sat down, and he said, 'Well, the reason

> why I am evaluating this class is because I've been having a lot of bad reports about this class from other teachers.' That's as they were in these other teachers' rooms. So he was evaluating the class, but since he was there he thought he'd do me at the same time. The only thing that I had down was that my bulletin boards were messy, and that's because I let kids put up anything they they wanted on the bulletin board. So after that I took that room and I made a standard beautiful bulletin board and told the kids don't you dare touch those bulletin boards; next time he was in he said, 'I'm glad to see you took my advice on the bulletin boards.' Obviously, he had no idea what I was doing at all.

The selection of the new principal was greeted with an attitude of wait and see, some skepticism, and a sense that the classroom would offer a safe harbor from the anticipated events and reactions to a new administration. One is struck by a hands-off attitude -- teachers will wait on the sidelines of their classrooms to see how things work out.

> We now have a principal. What will happen? The people who wanted him will be temporarily happy. Does the person make the job or the job the person? Time will tell.
>
> In time observant people will discover complainers complain, the rest will adjust and continue. He is a product of our system, born, raised and educated in the community. He started teaching here and has never taught anywhere else.
>
> It is going to be fun listening to people during this coming year to see if they are still happy with the choice, and the ones who aren't happy now, what will they say in a year's time?
>
> Personally, let me have a box of chalk, a chalkboard (black) and I can teach. Leave me alone, don't keep changing for the sake of change. Hopefully, a person who has been down the same road will not stray too far.

> Some people are going a little bit overboard and saying yeah, it's great, the new principal is going to be the answer to all our problems, but we're sitting back saying, yeah, well, ah, the fact that they're kind of acting and saying well, this is the way it's going to be does not necessarily mean that he's going to corroborate the feelings, and so I think there are going to be a number of people who will be either cooled off or will be grumbling about all the changes or lack of changes so we're right back where we started from in the beginning so I don't know what's going to happen. Some people are really going to jump, not everyone is going to be happy, to conclusions and it's going to be interesting how he handles the situation. I wouldn't want to be in the situation. I wish him all the luck in the world. There are so many unhappy people in this building I don't know how things are going to work out.

In the Michigan site there was much less focus on the principal who was in the second year of her appointment. Most of the discussion of the principal occurred in the third team meeting where team members contrasted the leadership styles of the current principal with the previous principal who had opened the middle school and had been the only principal in the school's history. Much of the dialogue centered on the leadership of the previous principal.

> Change is a top-down process. So the idea starts at the top and then filters down, well, it's just imposed on. For an example, I have always taught self-contained classroom, and I felt really strongly that that was the best thing to do for sixth graders and when we had our other principal, he always arranged it so I had a half day with the kids and then the other half day compartmentalized. There just wasn't any question or discussion about it. I was just compartmentalized, 45 minutes all day long, and that was a big, big change.

> Change is dictated to us and we accept it, not because we like it, but because we really think there's nothing we can do. And as a result, I think there's a lot of, or more than there was before, maybe, why do we have to do this? Which effects your whole way you go about the job, you know.

> And, too, I think that top-down -- our previous boss had an open door policy; his office was our lounge, in a sense, very really open, if you had a problem of any kind or just a question or whatever, feel free to ask it, come in and sit down and talk, whatever. Now it's everything by appointment only. You know, we're never that formal or we *were* never that formal. I think it's hard to change. By appointment only, I think, becomes very difficult for us to accept.

The previous principal's perceived free, supportive, and relaxed style of leadership enabled teachers to adapt and modify central administration directives to fit the school's context.

> And it was so funny because in every other building in the district they thought, oh, the administration is so lax here, you know, and they'd call us the country club and the whole thing. And he was probably the best administrator there was because he could get his people to do anything he wanted them to do, you know.
>
> They said when he left, when he retired, the central administration said, well, now that school will become part of the district again. Because he would come down with an edict from them and we'd accept it, but we'd always change it to fit our specifications. It was never exactly the way everyone else was doing it, but we probably were the only ones who were doing it and happy doing it, because we modified it and adjusted it.
>
> Because he referred to central office as 'them' just like we did.

The teachers' dialogue taken from a team meeting describes how the principal worked with them:

> Tchr 3 That's true but we even used to communicate on an informal basis about curriculum. It wasn't necessarily just on a personal level.
>
> Tchr 1 It seems like we got so much more accomplished because everybody wanted to get involved, you know, we weren't told we were asked. And now we're told.
>
> Tchr 2 I sometimes think back that even, I believe that he was a mastermind at being able to manipulate people. He hated the word, too, if you told him that he manipulated you, he hated it.
>
> Tchr 2 But you know, he made us all feel so good about doing things.
>
> Tchr 1 He just charmed you into doing the job, you know. Later on you would think he really got me again, but you didn't resent it.
>
> Tchr 2 And you also had a feeling that if everything was going amuck, there was still somebody at the helm that was sort of keeping us afloat.

The new principal has a "tough act" to follow and this is recognized:

> The man was very different, you know, you have to understand, and I think that's why many of us say nothing. You have to understand her position in all of this. You know, she's trying to assert her own self, make it her building.

For the Michigan teachers the attitudinal and moral support of the previous principal -- the carte blanche casual style of leadership was critical in teacher implementation of change.

> That administrator is more key to a success than that of a district program

> than the central office personnel. And I think in our last discussion about changing in this school led me to do some thinking about our last principal, no matter what you tried, he was always there. I guess you knew you had support for that, for change, and I think that maybe that's why we felt like we did.

> My favorite story was that a teacher wanted to dig a hole with the kids and make a pond. (Everyone laughed.) The principal said fine, go ahead, dig a hole, and he had kids out there digging, and they made a really nice pond. I think it needs some improvement every year or more work on it, but you get ducks here. They're growing. It really turned into a really wild game preserve.

The teachers recognize, however, that under the current leadership they have autonomy in their classrooms to make changes -- to experiment with new ideas. If teachers work toward school-wide goals no one limits their freedom in the classroom. The following conversation suggests that teacher autonomy has few limits:

> Tchr 1 When somebody gives me an idea, I guess that is what I like about generic skills so much. It was something you could talk about one day and the next day implement in the classroom. I like to try things. I'm not a daredevil, but I like to try things, and if you can pretty well assure me that it is going to work, I'll try it and if it fails, it fails and I shove that one aside. And I'll keep trying, and I find that is the only way to be really successful, by instituting a change.
>
> Tchr 2 Try something to see if it works.
>
> Tchr 3 Oh, I see. Because I think that is what I do also, you know, if I have an idea, and if it works, I get a good feeling, hopefully, the kids get a good feeling out of it.

Tchr 2 It is so easy to tell when you are just going down the tubes. You just know from the reaction of the kids.

Tchr 4 It depends on how big the change is, how big did I perceive that change? Depending upon how much time I have to plan for it; is it something you can just try or is it something big? What do I have to do to make sure I I know what is going to happen?

Rshr It sounds like nobody gets in the way of you making a change if you want to.

Tchr 4 No. As long as I reach the goals I can do them standing on my head and I appreciate that. (Laughter)

The picture of the role of the principal painted by the Michigan and New Hampshire teachers reflects their concern with how the principal influences the social life of the school -- the total feeling and personality of the school. By what the teachers do not say, as well as by what they do say, teachers do not want the principal to intervene in the life of the classroom. Freedom and autonomy in the classroom are deeply prized and valued. Whenever the principal visits the classroom teachers have ways of manipulating events so their territory and their ability to control classroom life are protected.

Teachers want the principal to listen to them, to involve them in decision making, to be concerned about their general welfare and to promote school morale. They see the principal primarily affecting school-wide and out-of-classroom matters. The principal, in their view, impacts and controls the school workplace and the norms of collegiality and experimentation through the management and allocation of time and through the school schedule. The context of the school is greatly influenced by the principal's leadership style and personality, by his/her small day-to-day decisions, and by his/her management and control of school time.

SCHOOL CONTEXT AND TEACHER INQUIRY IN THE MICHIGAN AND NEW HAMPSHIRE SITE SCHOOLS

The organizational environment, school history, the sociology of the school's time, and the opportunities for collegiality and innovation have been affected by the history of the principalship. The interrelationships of the contextual variables have created school contexts which have led both action research teams to independently identify the problem of scheduling for their research investigations.

In researching scheduling the Michigan and New Hampshire teams are generally investigating the organization and management of the middle school/junior high school. In terms of organization they are looking at the grouping of students and the teaming of teachers. In terms of management they are looking at the use of time and the scheduling of classes. The teachers who know how to organize and manage their classrooms are thinking about how to organize and manage the entire school day. The teachers seem to be extending their organizational and management skills at the level of the classroom to the level of the school. In a sense they are putting on an administrative hat and thinking like principals about a problem that has traditionally belonged to the principal. Teachers are responsible for the day-to-day operation of the school. Collaborative action research has provided teachers with the opportunity to inquire about the dimensions of school context outside the classroom. The relationship is reciprocal. School context has profoundly affected the nature and character of the teachers' action research projects.

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Organizational Environment Assessment Instrument: Year 1 and Year 2 Teacher Responses

TABLE 1

ORGANIZATIONAL ENVIRONMENT ASSESSMENT INSTRUMENT: TEACHER RESPONSES YEAR 1 AND YEAR 2*

For each of the items on the following pages, please circle the letter under the appropriate response.

Instructional Variable					
1. Does the school administration have trust and confidence in teachers	Have no confidence and trust in teachers	Have a little confidence and trust in teachers	Have substantial confidence and trust in teachers	Have complete confidence and trust in teachers	
	A	B NH-3 MI-1 NH-1	C MI-5 NH-2 MI-3 NH-3	D	1981 1982*
2. Do teachers have confidence and trust in the administration?	Have no confidence and trust in administrators	Have a little confidence and trust in administrators	Have substantial but not complete confidence and trust in administrators	Have complete confidence and trust in administrators	
	A	B MI-1 NH-5 MI-1 NH-3	C MI-4 MI-3 NH-1	D	1981 1982
3. Is the behavior of administration supportive?	Behavior is not supportive	Behavior is somewhat supportive	Behavior is generally supportive	Behavior is fully supportive	
	A	B MI-1 NH-4	C MI-3 NH-1 MI-3 NH-4	D MI-1 MI-1	1981 1982
4. What kinds of teacher motives are used by the school system?	Job security, economic needs, and the desire for status	Economic needs and moderate use of the desire for status, affiliation with peers and achievement	Economic needs, desire for status, affiliation with peers and the desire for achievement and new experiences	Economic needs, desire for status, affiliation with peers, achievement new experiences an motivation arising from group goals.	
	A NH-3 NH-1	B MI-1 NH-2 MI-1 NH-3	C MI-1 MI-1	D	1981 1982

*1982 responses from four New Hampshire and four Michigan teachers, reflecting loss of one teacher from each 1981 team.

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TABLE 3 (continued)

		A	B	C	D	
5.	What kinds of attitudes have developed among the staff toward the school and the school's goals?	Strongly favorable and motivating	Usually favorable and motivating	Sometimes hostile and not motivating	Mostly hostile and not motivating	
			MI-4 NH-1	MI-1 NH-4		1981
			MI-3 [illegible]	NH-1		1982
6.	What amount of responsibility does the school staff feel for achieving school goals?	Most personnel at all levels feel strong responsibility	Some personnel at all levels feel responsibility, but especially administrators	Administrators usually feel responsibility, other personnel feel very little responsibility	Only administrators feel responsibility	
			MI-5 NH-3		NH-1	1981
			MI-3 [illegible]	NH-1		1982
7.	What is the amount and quality of interaction among members of the school staff?	Extensive, friendly interaction with a high degree of trust and confidence	Moderate interaction, often with a fair degree of trust and confidence	Little interaction and usually with a low degree of trust and confidence	Little interaction and always with fear and distrust	
		MI-1	MI-3 NH-2			1981
		[illegible]	[illegible]			1982
8.	What is the amount of cooperative teamwork present in the school?	Very substantial amount throughout the school	A moderate amount through most of the school	Relatively little, only among a few people	None	
			MI-3	MI-2 NH-5		1981
			MI-2 NH-1	MI-1 [illegible]		1982
9.	At what levels in the school are decisions made?	Most are made at the top administrative levels	Policy decisions are made at the top, others are made at middle levels within stated policy	Policy decisions are made at the top, more specific decisions are made at all other levels	Decisions are made throughout the school but linked through various kinds of groupings	
		MI-2 NH-1	MI-1 NH-3	MI-2		1981
		MI-3 NH-1		NH-2	NH-1	1982

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TABLE 1 (continued)

10.	In what manner are school goals usually determined?	By means of group participation	Goals are set after discussions with teachers	Goals and orders are issued, opportunity for discussion may or may not exist	Goals are issued as orders	
		A	B MI-2	C MI-3 NH-3	D NH-1	1981
		[illegible]	[illegible]	[illegible]	[illegible]	1982
11.	Are there forces existing in the school that cause the acceptance, rejection or resistance of goals?	Goals are fully accepted	Goals are overtly accepted but with some overt resistance	Goals are accepted but often with some open resistance	Most goals are resisted or rejected.	
		A	B MI-5 NH-1	C NH-1	D NH-1	1981
			[illegible]	[illegible]		1982
12.	Do teachers feel free to discuss important things about their jobs with their immediate superiors?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all	
		A MI-2	B MI-3 NH-2	C NH-1	D NH-1	1981
		MI-2	MI-2 NH-2	NH-2		1982
13.	Do teachers feel free to discuss important things about their jobs and the school with school administrators?	Teachers feel completely free	Teachers feel somewhat free	Teachers do not feel very free	Teachers do not feel free at all	
		A MI-2	B MI-2 NH-2	C MI-1 NH-1	D NH-1	1981
		NH-1	MI-2 NH-2	NH-1		1982
14.	Do immediate superiors (department heads and house leaders) generally try to get teachers' ideas and opinions in solving problems?	Always	Usually	Sometimes	Seldom	
		A MI-2	B MI-1 NH-3	C MI-2	D NH-1	1981
			MI-1 NH-1	NH-2	NH-1	1982

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TABLE 1 (continued)

	A	B	C	D
15. Do immediate superiors make constructive use or teachers' ideas and opinions?	Always	Usually MI-3 [illegible]	Sometimes MI-2 MH-2 [illegible]	Seldom MH-1
16. Is the information shared by administrators adequate?	Not at all adequate MH-1 [illegible]	Adequate MI-2 [illegible]	Somewhat adequate MI-3 MH-2 [illegible]	Very adequate
17. Is the communication between teachers and the administration adequate?	Not at all adequate MH-2 [illegible]	Adequate MI-4 MH-1 [illegible]	Somewhat adequate MI-1 MH-1 [illegible]	Very adequate
18. Is the communication through house or department leadership to the administration accurate?	Not at all accurate MH-1	Accurate MI-4 MH-1 [illegible]	Somewhat accurate MH-2 [illegible]	Very accurate [illegible]
19. Is the communication between teachers adequate for achieving school goals?	Very adequate MI-1	Adequate MI-2 MH-1 [illegible]	Somewhat adequate MI-1 MH-2 [illegible]	Inadequate MI-1 MH-2 [illegible]
20. How well does administration know and understand problems faced by teachers?	Know and understand very well MI-1	Know and understand fairly well MI-1 MH-1 [illegible]	Don't know or understand very well MI-3 MH-3	Don't know or understand at all [illegible]

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TABLE 1 (continued)

	Question	A	B	C	D	
21.	How well do teachers know and understand problems faced by the administration?	Know and understand very well	Know and understand fairly well	Don't know or understand very well	Don't know or understand at all	
			MI-2 NH-1	MI-3 NH-2		1981
			NH-1	MI-4 NH-2	NH-1	1982
22.	To what extent can teachers influence the goals and activities of their teams and departments?	Not at all	Very little	Moderately	Substantially	
			NH-3	MI-4 NH-1	MI-1	1981
			NH-1	MI-3 NH-2	MI-1 NH-1	1982
23.	To what extent can administration influence the goals and activities of teams and departments?	Not at all	Very little	Moderately	Substantially	
			MI-1 NH-1	MI-1 NH-1	MI-3 NH-3	1981
				MI-1 NH-1	MI-1 NH-5	1982
24.	Does the way in which decisions are made help to create the necessary motivations in those who have to carry out the decisions?	Substantially aids motivation	Moderately aids motivation	Aids motivation to only a small degree	Adversely affects motivation	
		MI-1	MI-1	MI-3 NH-3	NH-1	1981
		MI-1	MI-1 NH-1	MI-2 NH-1	NH-1	1982
25.	To what extent are teachers generally involved in decisions related to their work?	Not at all	Seldom involved but occasionally consulted	Usually consulted but not often involved	Substantially involved	
		NH-1	MI-2 NH-3	MI-3 NH-1		1981
			NH-2	MI-2	MI-1 NH-1	1982
26.	To what extent are teachers involved in developing special programs for students?	Not at all	Seldom involved, occasionally consulted	Usually consulted, often involved	Substantially involved	
		NH-1	NH-1	MI-3 NH-2	MI-2 NH-1	1981
			MI-1 NH-2	MI-1 NH-2	MI-2	1982

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Research-Teaching-Development Questionnaire: Year 1 and Year 2 Teacher Responses

RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE*
PRE-POST TEACHER RESPONSES

	New Hampshire								Michigan							
	Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Knowledge of general principles of research design.	3	3	2	2		2	1	2	2	3	1	2	2	2	2	2
2. Knowledge of specific experimental and quasi-experimental designs.	3	3	2	2		1	1	2	1	2	1	2	2	2	1	1
3. Knowledge of factors which jeopardize internal and external validity of research design.	2	2	2	2	1	2	1	2	2	3	1	2	1x	2	2	2
4. Ability to operationalize a research design into specific research procedures.	2	3	2	3	1	1	1	1	2	2	1	2	1x	2	1	2
5. Ability to identify and articulate a researchable problem.	2	3	3	3	2	2	1	1	2	3	1	3	2	3	2	3
6. Ability to formulate testable hypotheses or researchable questions.	2	2	3	3	2	2	1	1	2	3	1	3	2	3	2	2
7. Knowledge of specific questionnaire construction techniques.	3	3	x	2	1	1	1	2	2	3	1	2	2	2	2	3
8. Ability to select appropriate standardized tests or instruments.	3	3	2	2	1	1	1	2	1	2	1	2	2	2	1	1x
9. Knowledge of sampling theory and techniques	3	3	x	2	1	1	1	1		3	1	2	2	2	1	1x
10. Ability to make a distinction between an objective observation and a personal reaction to what is observed.	3	3	3	3	2	2	1	2	2	3	1	2	3		2	2
11. Ability to plan data collection procedures appropriate to a research or evaluation activity.	2	3	1	2	2	2	1	2	2	3	1	3	1x	3	1	2

*Range of responses 1 = No Skill; 2 = Somewhat Skilled; 3 = Highly Skilled; x = No Skill but familiar

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (continued)

	New Hampshire								Michigan							
	Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
12. Ability to design and conduct interviews for the purpose of collecting data.	1x	3	1	2	2	2	1	3	2	3	1	3	1x	3	2	3
13. Ability to construct instruments to assess attitudes and other affective variables.	1x	3	1	1	1	2	1	2	2	3	1	2	1x	2	1	2
14. Ability to identify bias and/or prejudice in written reports of classroom events.	2	3	2	1	2	2	1	2	2	3	1	2	2	2	2	2
15. Ability to use formal or informal systems of recording observations of behavior.	3	3	3	3	2	1	1	2	2	3	1	2	2	3	2	2
16. Knowledge of instrument reliability, including types of reliability coefficients.	2	3	2	3	1	1	1	1	1	2	1	1	1	2	1	1x
17. Knowledge of instrument validity, including various approaches to determining validity.	2	3	2	1	1	1	1	1	1	2	1	2	1	2	1	1x
18. Ability to use library research techniques (e.g., indices to periodicals).	3	3	2	2	2	2	2	2	3	3	1	2	3	3	2	2
19. Ability to use ERIC or other information retrieval systems.	2	2	3	2	1	2	1	1	2	3	1	2	1	2	2	2
20. Ability to establish criteria for evaluating research.	2	3	x	1	1	2	1	1	2	3	1	2	2	2	1	2
21. Ability to conduct item analyses, including computation of difficulty and discrimination indices.	1x	3	2	1	1	1x	1	1	1	2	1	1	1	2	1	1x

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (continued)

		New Hampshire								Michigan							
		Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
22.	Ability to choose appropriate statistical techniques for data analysis.	2	2	x	2	1	1x	1	1	1	2	1	1	1	2	1	1x
23.	Knowledge of descriptive statistical techniques (e.g., means, standard deviation, correlations).	3	3	x	3	1	1x	1	1	2	2	1	1	1	1	1	1x
24.	Ability to generalize from a set of discrete statements or conclusions.	2	3	2	3	2	2	1	2	2	3	1	2	2	3	2	2
25.	Ability to use standardized ("canned") computer programs (e.g., SPSS).	1x	2	x	3	1	1	1	1	1	2	1	1	2	2	2	2
26.	Ability to read and interpret computer output.	1x	2	2	3	1	1	1	1	2	2	1	1	1	2	2	2
27.	Ability to interpret and integrate statistical data into a meaningful presentation.	2	3	x	3	1	1x	1	1	2	3	1	2	2	2	2	2
28.	Ability to organize and classify information into meaningful categories.	3	3	2	3	2	2	1	1	2	3	1	2	3	3	2	2
29.	Ability to use editorial skills on one's own writing or that of others.	2	2	3	3	1	1x	1	2	2	3	1	2	3	3	2	2
30.	Knowledge of alternate methods of presenting data (e.g., graphs, tables).	2	2	2	3	2	2	1	2	2	3	1	2	2	2	1	2
31.	Ability to lead group discussions, moderate meetings, or facilitate constructive interactions among personnel.	2	3	2	2	2	2	2	2	3	3	1	2	2	2	3	3

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (continued)

	New Hampshire								Michigan							
	Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
32. Ability to analyze critically a person's teaching behavior.	2	2	2	3	1	1x	1	2	3	3	1	2	2	2	3	3
33. Ability to record classroom events accurately and objectively.	2	3	3	3	2	2	2	2	2	3	1	2	3	3	3	3
34. Ability to determine relations between teacher behavior and student behavior.	2	3	2	3	2	2	2	2	2	3	1	2	3	3	3	3
35. Ability to identify patterns of teaching behavior from a transcript of teacher-student talk.	2	2	2	2	1	1x	1	1	3	3	1	2	2	2	3	2
36. Ability to distinguish between a classroom problem and a symptom of that problem.	1x	3	3	3	2	2	1	2	2	3	1	2	2	2	3	3
37. Knowledge of techniques of classroom observation.	2	3	2	2	2	2	1	2	2	3	1	2	2	2	3	3
38. Knowledge of procedures and steps in developing curriculum materials.	3	3	x	3	2	2	1	2	2	3	1	2	2	2	2	3
39. Knowledge of at least one curriculum planning model.	1x	3	x	3	1	1x	1	2	2	3	1	2	3	2	2	3
40. Knowledge of various instructional approaches that might be incorporated into curriculum materials.	2	3	2	2	2	2	1	2	2	2	1	2	3	3	2	3
41. Ability to use field-testing techniques during preliminary tryout or implementation of new curriculum materials.	1x	2	x	2	2	1x	1	2	2	3	1	2	2	2	1	3

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (continued)

	New Hampshire								Michigan							
	Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
42. Ability to diagnose an individual student's status in attainment of the basic skills.	2	3	2	3	2	2	1	2	3	3	1	2	3	3	3	3
43. Ability to apply knowledge of individual students' abilities to the formulation of a program of instruction.	3	3	2	2	2	2	1	2	3	3	1	2	2	2	2	3
44. Ability to plan an instructional sequence for a small group of students (4-8) in social studies.	2	3	x	1	3	2	1	2	3	3	2	1	2	1x	1	2
45. Ability to coordinate several instructional units for use by groups of students at about the same time.	1	3	2	3	2	2	2	2	3	3	2	2	2	3	3	2
46. Ability to individualize instruction.	3	3	2	3	2	1x	2	2	3	3	2	2	2	3	1	2
47. Ability to prepare instructional materials appropriate to a student's developmental level.	2	3	2	2	2	2	1	2	2	3	2	2	2	3	1	3
48. Knowledge of at least one major theory of learning.	2	2	3	3	2	2	1	2	2	3	2	2	2	3	2	3
49. Ability to state student learning objectives in measurable terms.	3	3	3	3	2	2	1	2	2	3	2	2	2	3	1	3
50. Knowledge of techniques for assessing student achievement in relation to behavioral outcomes.	2	3	x	3	2	1x	1	2	2	3	2	2	2	2	2	2

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RESEARCH-TEACHING-DEVELOPMENT SKILLS QUESTIONNAIRE (continued)

	New Hampshire								Michigan							
	Brooks		Elliot		Ted		John		Jim		Anne		Florence		Lori	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
51. Knowledge of systems developed to categorize human behavior or abilities (e.g., Bloom's taxonomy).	2	3	2	3	1	1	1	1	3	3	2	2	1	2	2	3
52. Ability to sequence learning activities to facilitate student learning in curriculum or set of curriculum materials.	3	3	1	3	2	1	1	1	3	3	2	2	2	3	3	3
53. Ability to identify and articulate the objectives of the activity or institution.	1	3	3	3	2	2	1	2	3	3	2	2	2	2	2	3
54. Ability to identify and articulate the formal and informal decision making processes in the school.	3	3	3	3	2	2	1	2	2	3	1	2	2	2	2	3
55. Ability to analyze norms and values in the school.	2	3	3	2	2	2	1	2	2	3	1	2	1	2	1	3
56. Ability to analyze patterns of communication among teachers and administrators in the school.	2	3	3	3	2	2	1	2	2	3	1	2	1	2	3	3
57. Ability to identify patterns of change in the school.	1x	3	3	3	2	2	1	2	2	3	1	2	2	3	2	2

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